



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>



Per. 17185 e. $\frac{163}{1270}$



THE
G A R D E N E R
A M A G A Z I N E
OF
HORTICULTURE AND FLORICULTURE

EDITED BY
WILLIAM THOMSON
DALKEITH GARDENS
AND
RICHARD DEAN

1870



WILLIAM BLACKWOOD AND SONS
EDINBURGH AND LONDON
MDCCCLXX

PRINTED BY WILLIAM BLACKWOOD AND SONS, EDINBURGH.

THE GARDENER.

JANUARY 1870.



TO OUR READERS.



THE nature of the new arrangements which have been made in regard to the editorial management of the 'Gardener' was shadowed forth in the November issue. With the present number commences that joint occupation in the work of conducting the magazine which has been intrusted to us by the Proprietors. Working in perfect harmony, and with the utmost desire to discharge our duties to the best of our ability, we take this opportunity of expressing our mutual desire that the 'Gardener' may continue to be received as a familiar friend; and also the hope that in the future, as in the past, it will be found so replete with useful and unassuming information as to render its monthly visit an event to be anticipated with eagerness and realised with sincere pleasure. The nature of the matter we shall lay before our readers from time to time will be ample, varied, and capable of being readily comprehended; and being supplied by successful growers, or selected from the best authorities on all subjects—whether of fruits, flowers, plants, or vegetables—will, it is hoped, tend to make the 'Gardener' of value as a book of reference; whilst, by truthful descriptions of the novelties each season produces, the amateur will be much assisted in selecting any additions he may require.

As a medium of communication, it is earnestly desired that our pages may be largely used by cultivators in every department of horticulture, as well as of every rank and station therein. To this end a liberal correspondence is invited; and under the head of 'Notes and Queries' we hope to open up a feature that shall prove one of the most inter-

esting to our general readers ; and every facility will be afforded for useful and temperate discussion.

Earnestly believing that "the study and culture of flowers and fruit, plants and vegetables, exercises an important influence on the education and wellbeing of the people—that it teaches, refines, and elevates in proportion as the results of skilful practice and the power given to man to ameliorate and develop new things in nature are successively demonstrated—and that it largely promotes the material comforts of mankind,"—the Editors will endeavour, with sincere earnestness of purpose, to make their conduct of the 'Gardener' an illustration of this belief, and the work itself a worthy advocate of the cause it was originated to serve.



NOTES OF THE MONTH.

THE last month of the year—when leaden skies and dull short days prevail—is invariably that particular season when things horticultural are at their lowest ebb, in so far as they attain publicity. With the exception of the one meeting of the Royal Horticultural Society on the 21st ult., that was probably the only meeting of the character held throughout the kingdom. But there must be a state of repose as a necessary adjunct to a time of activity, and there must also be a period of preparation for the yet undeveloped work of the coming spring and summer.

It is not too much to say that considerable interest was felt as to the decision of the Royal Horticultural Society in regard to its great Summer Exhibition. Would it continue to follow the Royal Agricultural Society, as it has done for the past three years, or would it boldly stand alone, and on its own merits challenge provincial support? It has decided,—and in July next it will pitch its tents by the side of those of the Royal Agricultural Society at Oxford. It has done this despite the appeals of many of the Society's best advisers, and with nearly the whole of the horticultural press condemning such a course of proceeding. Rumour has it that some members of the council are in favour of the Society going alone to the country, probably in 1871. So there is hope in the future; and some sanguine ones predict that in 1871 the two societies will part company, and, taking opposite directions, each discharge its own peculiar functions in different localities. Report also states that the balance of gain derived from the Manchester Show will fall short of the somewhat modest sum originally stated.

In regard to its home work, there will be considerable modifications of the operations of the Society. All great shows, as such, are partially, if not wholly, abolished—there will no longer be exhibitions in the form in which they have hitherto been held ; but while the same amount of prize-money will still be given, it will be in the form of prizes spread over all the ordinary meetings of the Society on the occasion of the assembling of the Floral and Fruit Committees ; so that each of these meetings, which are always of an extremely interesting character, and have proved most successful, will now be doubly interesting, and it is hoped, successful even in a larger degree. It is these meetings that so much tend to reconcile to the Society—to some extent at least—that large and influential body of practical horticulturists who in times past had looked with much mistrust on some of the actions of the council, and not unfrequently given expression to this mistrust. The special exhibitions of Hyacinths and Roses will still be held, but superadded to one of the ordinary meetings of the Society. Naturally enough, exhibitors and others are anxiously looking for the issue of the Society's programme of arrangements and schedule of prizes for 1870, which has only come to hand at the last moment. The delay is at least unaccountable, perhaps unavoidable.

The exhibition season may be fairly said to open in March next, when the Hyacinth shows will be held. That of the Royal Horticultural Society will take place on March 16, and the Dutch growers will again offer some of the special prizes they so liberally gave last year. Considering how close was the competition between Messrs Cutbush & Paul in March last, when the former won the two principal special prizes, their meeting in 1870 will be regarded with redoubled interest. The spring show of the Horticultural Society of Liverpool, which yearly brings together a magnificent display of Hyacinths from the local growers, takes place on the same date as that of the South Kensington Exhibition, and the Royal Horticultural Society of Ireland announces a similar show on March 24th. In addition to the prizes given by the Irish Society, there are three silver cups of the value of five guineas : one of these is for the gardener who takes the greatest number of prizes, and is subscribed for by the gardeners themselves. The Hyacinth, therefore, will be well looked after ; and certainly no show can be prettier and more attractive than one of Hyacinths and other spring flowers.

From the 'Athenæum' we derive the following curious passage relative to the change of colour in leaves. It is stated that "experiment has confirmed the conclusion that leaves turn red at the end of the season through the action of an acid, since one of the elements producing the green colour must be a vegetable blue. Autumnal

leaves placed under a receiver, with the vapour of ammonia, in nearly every instance lost the red colour and renewed their green. In some, such as the Blackberry and Maple, the change was rapid, and could be watched by the eye ; while others, particularly certain oaks, turned gradually brown, without showing any appearance of green."

An announcement has recently been made that Colonel Scott, the Secretary of the Royal Horticultural Society, had offered a prize of five guineas for the best essay on the Principles of Floral Criticism, to be awarded on the occasion of the first meeting of the Royal Horticultural Society on Wednesday, January 19, next. We now learn that the prize will not be awarded till Wednesday, May 4 ; and the 'Gardeners' Chronicle,' referring to the many complaints of the vagueness of the proposal made by correspondents, states that they are asked "whether an essay on the 'correct standard' for florists' flowers be intended, or one on the proper method of judging plants in general at exhibitions. Perhaps," adds the 'Chronicle,' "some light might be thrown on the matter if the names of the judges were announced. The subject is one of so much importance, that we trust fuller information may be forthcoming, and for our own parts we should like to see the matter treated in a broad and catholic spirit." And *we* say, Ditto, and cannot help expressing our conviction that very much will depend upon who are to be the judges of the essays. An essay of this character should be so conceived and constructed as that it should become an authority, and a work of reference to some extent, though the limits of an essay will probably help to mar its usefulness in this direction.

A "seed case," in the form of an appeal from the decision of a lower court, came before one of the Irish courts of law at Dublin a few weeks ago, presenting some features well worthy of a passing notice. The appeal was from a decision of the Recorder of the city of Dublin, who dismissed the claim of a small market-gardener, living in the neighbourhood of Donnybrook, for the sum of £13, being the amount of eighty-seven flaskets of Cauliflowers, which he alleged were not marketable, and that were a portion of the crop, consisting of an English acre, produced from 8 oz. of seed, which cost him 12s. The seed grew well, and the plants produced were enough to plant out an English acre. The evidence of the plaintiff and his witnesses went to show that the crop was deficient to the extent of the sum named, inasmuch as a portion of the crop was not marketable Cauliflowers, by reason of the discoloration of the flowers, and their starting to seed, thereby reducing the value of the crop. The defendant—Mr James W. Mackey, an alderman of the city of Dublin—attested that he had distributed 28 lb. of this seed between two and three hundred people,

and only three complaints were made regarding it. It was contended that the deterioration of the crop was simply the result of the effects and influences of season, and an abnormal growth, which continually characterises every description of vegetable and green-crop produce—points well known to intelligent gardeners and scientific men. The effects and influences of season were singularly illustrated in the case of one witness, who deposed, in August 1869 he purchased of Mr Alderman Mackey 8 oz. of Cauliflower seed, 4 oz. of which were sown, and produced an inferior crop of Cauliflowers, of which he complained; while the remaining 4 oz. sown the spring following gave a splendid crop, which paid the grower at the rate of £30 per acre. The variableness of crops was illustrated in the case of other evidence adduced; but as there happened to be something like a dozen plants of Brussels Sprouts in the acre of Cauliflower (respecting which no one was hazardous enough to swear they came from the Cauliflower-seed), yet the appeal was allowed by a common jury, on the ground “that the seed was not all Cauliflower-seed,” and the costs and expenses had to be borne by the defendant. In a letter published in the ‘Irish Farmers’ Gazette,’ from the pen of Mr Mackey—the outcome of a straightforward honest tradesman, who felt that he had been wronged, and who nobly disdained any suggestions of compromise, preferring to stand by the broad principle involved in the decision—the defendant states, with much truth, that “in reversing the decision of the Recorder, the jury proclaimed to the public that a seedsman is to be held responsible for the result of crops that the grower is not satisfied with—a judgment that will not be endorsed by any practical man who knows that every year’s experience proves, that while the crops of Mangold-Wurzel, Carrots, &c., are to be seen starting and running to seed in every well-tilled field, while the finest crops of Potatoes and Turnips are produced, yet, when the grower comes to lift his produce of the latter, he too often finds one-third, and sometimes one-half, rotten, and, as complained of in this case, “not marketable;” and the unhappy vendor of the seed, by the same parity of reasoning, would be mulcted in damages by the decision of a petty jury of the city of Dublin.” As an illustration of the variableness of crops, and as affording an apt comment in the case just noticed, we may state that one of the London wholesale seed-houses, famous for the quality and purity of its stocks of round seeds, and the care with which it selects them, some time since sent to one of their growers a quantity of impregnated Walcheren Cauliflower, saved specially from some very fine selected heads for their unmistakable quality. The produce of this seed planted a large piece of ground, and, singular to say, there was scarcely a plant but which was abnormal in growth, and went

prematurely to bloom, and was utterly worthless for seed purpose. In all probability—if it is not reduced to a certainty—this self-same seed in another season would have produced Cauliflowers as fine in quality as those from which the seed was originally taken. Of late the seedsmen have had many detractors, and of these not the best informed or the least prejudiced. Those who know them best see less of their assumed culpability, and discover how rashly made were many of the utterances that have of late had publicity given to them.



AMATEUR CULTIVATION OF THE HOLLYHOCK.

It must by no means be assumed, that because comparatively little is now written about the Hollyhock, its area of cultivation has in consequence become considerably reduced. It is still a flower much grown, and long may it continue to be grown, for its rich beauty and its great usefulness as a decorative agent. As one who has cultivated the Hollyhock for many years past, I may be permitted to put forward a plea in its favour in the pages of the 'Gardener.'

My custom is to pot up the ground roots of the Hollyhocks—*i.e.*, those from which I have taken my exhibition flowers during the summer—in November, using pots according to the size of the roots, and generally employing the sizes thirty-twos and twenty-fours: these I find quite large enough for the greater part of the roots. They are first duly trimmed, and then potted firmly in a light sandy soil, and if not naturally sandy, I mingle with it a good portion of road-grit, with the addition of some leaf-soil. When potted, they have the protection of a greenhouse pit, and are kept rather dry during the winter months, as they are impatient of much moisture round the collar of the plant, and many a good variety has been lost from this cause.

Death from excessive moisture is often the lot of the plants allowed to remain in the open ground all the winter. Their existence is materially aided by placing either sand or cinder-ashes round the neck of the plants to protect them from wet, as well as insects and slugs, the last-named being a dreaded enemy of the Hollyhock—so much so, that it is often necessary to give the plants a dusting of slacked lime in damp weather. I commence the process of propagation by the middle of February or the beginning of March, as at this season of the year cuttings made from the young growth from the plants root readily. I take them off about 4 inches long, and place several in 32-sized pots, using a soil similar to that I should employ for striking cuttings of bedding *Pelargoniums*. I press them firmly into the soil, and then

well water them, so as to thoroughly saturate the soil; they will then require but little water afterwards, until they are rooted. I place the cutting pots in a temperature of from 65° to 75°, and if some bottom-heat can be employed, so much the better. Should some of the larger leaves suffer from damp, a pair of scissors will soon remove them.

I often avail myself of the propagating season to raise some seedlings, when I have at command such a temperature as that stated above. Using a light sandy compost, I sow the seed very thickly in pots or seed-pans, and as soon as large enough to handle, I pot them singly into small 60-pots about the time I do the cuttings, for I use the same-sized pots for each. As soon as the pots are filled with roots, both cuttings and seedlings, I shift into 32-pots, and if the plants are kept growing till the middle of April, they can be gradually hardened off preparatory to being planted in the open air, and both seedlings and cuttings will bloom the same season.

The work of preparing the ground for the reception of the plants is an important matter. The situation I select as an exhibitor is a spot quite remote from the shade of trees, or the reach of their roots, and where the plants can have the full benefit of the sun. The ground should be well trenched previously, at least 2 feet deep, and plenty of rotten dung worked in as the work proceeds: dung from an old cucumber-bed will be found very suitable for the purpose.

I select a fine day for planting out, when the soil is in good working order. The plants are placed in rows fully 5 feet apart, the plants 4 feet apart in the row. As soon as the plants are 1 foot in height, they are staked, the stake being driven firmly into the ground, and the plant secured to it by pieces of matting, not too tightly, so that there is perfect freedom of expansion. As the plants increase in size I employ strong twine for tying out, as a security against winds. At this stage it is highly important that the plants be kept growing freely, and plenty of water is given in hot and dry weather, and copious sprinklings overhead from a rose watering-pot. If I cannot get rain-water, I always expose it to the influence of the sun before using it.

Red-spider often causes the cultivator some trouble. I cut off all leaves infested by it and bury them, and mulch the plants well with fresh rotten dung, and give a copious soaking of manure-water once a-week. The exhibitor should allow but one spike of flowers to each plant, and in the case of cut flowers being required, they should be thinned out so as not to interfere with each other. This is best done with a pair of strong scissors.

Well and truly has the Hollyhock been termed "a noble flower." For garden decoration it is in some respects unapproachable, yielding such fine masses of gay-coloured flowers. It can be planted in various

ways—one especially, that as a back row to a broad ribbon-border. I have used it in several ways in the flower-garden, and always with the best effect, and am of opinion that such a garden is not comparatively perfect even without it. I hope to give some hints shortly on the use of the Hollyhock as a decorative agent in the flower-garden.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



THE CULTIVATION OF HARDY FRUITS.

THE PLUM.

(Continued from page 541 of 1869.)

THE Plum being one of the hardiest of fruits, many of its varieties are admirably suited for cultivation in the open ground. If a tall-standard form of growth be intended, the stronger-growing varieties must be fixed upon—the young shoot made the first season must be trained up to a stake, so as to keep it erect. If at the end of the season's growth it has attained the desired height and perfected its wood, so much the better; but if not, it ought to be cut back to the first plump bud upon the ripened wood, and the following year trained up to the desired height. If it takes two years to accomplish this, there will be a number of young shoots made upon the former year's wood; these, during the summer, ought to be regularly pinched back to three or four eyes, so as to throw strength into the leader. At the winter pruning these ought to be cut back entirely, so as to leave a clean bare stem. Standard Plums are grown at heights ranging from 3 to 5 or 6 feet. 4 feet is considered to be a very good height. To get this, prune the leader 2 or 3 inches higher; the following season three or four shoots can be had springing from the stem to form the young tree at the desired height. All other shoots made lower than this we would pinch as already hinted, and cut clean off at the winter pruning. The shoots left for forming the tree should be cut back to about 1 foot in length, so as to get the tree well furnished, and avoid a long and straggling habit. In the case of a variety which has a tendency to grow very erect, the pruning should be done directly beyond a bud, in such a position as would tend to spread out the branches as much as possible. Where the habit is drooping, as is generally the case with plums, the point-bud left at the pruning season ought to be directly on the top of the shoots, in order to encourage a more erect habit of growth. The cultivation in all after-management of young standard-plums must be guided by circumstances, as well as taste in the

formation of the trees, as it is impossible to give a pen-and-ink sketch which would be alike satisfactory to instructor and instructed.

Where dwarf-standards are desired, the weaker-growing sorts are best. After the first year's growth, the leader may be cut back to 15 or 18 inches, leaving three or four nice plump buds to form the young tree. These the following season must be cut back to about 1 foot, using the knife with discretion, and bearing in mind the rules already laid down.

I have never tried the Plum as a pyramid, nor have I ever seen it as such. From its general appearance and habit, and the mode of pruning and training necessary, it is my opinion that, grown as pyramids, it would not succeed. I may be wrong, but my idea is, that as such it would be far more likely to make such growth as would result in the production of wood in place of flower-buds. If any one has grown the Plum in that way, and succeeded, it would give me much pleasure to receive their experience through the pages of the 'Gardener.'

No matter whether as a tall or dwarf standard, the Plum is much benefited by a regular course of root-pruning. As I have said so much upon this point when speaking of the Apple and Pear, it is only needful to say that it is *necessary*, and may be commenced when the young tree is two or three years of age, and continued regularly, at intervals of two or three years, for a considerable length of time. Great care must, however, be taken to dress neatly with a sharp knife every root that is cut, so as to avoid, if possible, anything that would tend to encourage canker, or the effusion of gum—the two great enemies of the Plum cultivator. When this operation is performed, a little fresh material, such as I shall presently recommend to Plum cultivators, ought to be introduced round the trees; and should the winter be severe, or the following summer very dry, it will be found of great advantage to give each tree a liberal mulching with good stable manure. This, in fact, is a very safe practice, and may with advantage be adopted under any circumstances. The best time to perform this operation is in September or October, although, if care and caution are exercised, it may with even greater advantage be performed in August upon such trees as may not be bearing a crop of fruit.

The soil which appears best to suit the Plum is a good strong loam, although in its natural state it is generally found in light and dry soils. When cultivated in soils of this description it flowers freely, but sets its fruit badly, and the fruit is generally small and poor in flavour. The best-flavoured and most handsome fruit is generally to be obtained from trees planted in good, strong, and moderately rich loam, which has been well drained, yet is not too dry. In soils of this

nature it has been found, both in this country and in America (by Downing), that the trees are more secure from the attacks of insects than in soils of a light and sandy nature. Although the roots of the Plum do not penetrate to such a depth as those of the Pear or Apple, it is nevertheless of great advantage to have a good deep soil for it: in such a position it will not be likely to suffer so much from the effects of a dry season as it would in a shallow soil. Where the soil of the garden is found to be of too light a nature, it would be wise to introduce a quantity of clay or very heavy loam to mix with it, or, what would be better still, to procure a quantity of good strong loam, removing the old, and replacing it with the new at planting time. With this may be incorporated a moderate quantity of decayed stable or other manure. A little wood-ashes or charcoal, and a few crushed bones, may with advantage be added to the whole. As already hinted, excess of dryness or moisture is often injurious to the Plum, being frequently the cause of gum exuding, as stated by Thompson in his 'Gardener's Assistant.' To obviate this, it is necessary to have the ground drained, but not over-drained; and, if the soil be shallow, to have recourse to mulching in dry seasons.

The distance apart at which Plums ought to be planted will require to be regulated by circumstances, similarly with what has been stated in regard to the Apple and Pear. When planted against walls, the distances may vary from 12 to 24 feet, or even in some cases 30 feet, according to the height of the wall, and the sorts that are grown. In wall cultivation, the size and flavour of the Plum are often increased, and in proportion to the position given are these qualities still further developed. The Plum, being very hardy, is often placed in a north or eastern aspect; and although we have seen good crops and good qualities of fruit obtained from trees in these positions, nevertheless a more favoured aspect will be more satisfactory. It is impossible to provide a southern aspect for everything; yet, if it be at all possible, I would recommend that some of the finer varieties—such as Coe's Golden Drop, Green Gage, and such like—be placed in this position, as they will not only be earlier, but also of finer quality, of larger size, and more beautiful in appearance. In planting Plums in the open garden or orchard, the distances for dwarf-trained trees may range from 12 to 18 feet, and for standards on high stems that are intended to form large trees, the distances may range from 18 to 30 feet, according to the size intended. In all cases of fruit-tree planting, I would earnestly impress upon every one to stake each tree neatly and securely, as nothing is more injurious to newly-planted trees than to be tossed to and fro by every wind that blows, or "every breeze that moves the midnight air."

The diseases to which the Plum is subject are only two, so far as we have been able to ascertain—viz., canker and gum. The former of these is generally the result of a wet and uncongenial climate; the latter is generally caused by wounds made by the rubbing of wall nails, or injury to the bark by the breaking and bruising of it by the hammer, or by being cut by string, shreds, or suchlike, and then neglected. If these things be regularly attended to, and the soil and climate prove to be at all congenial, there is little danger to be dreaded from either of these diseases until the trees advance into old age.

The insect enemies of the Plum are not nearly so numerous in this country as on the Continent, and more especially in America, where it is said "their attacks are so formidable as almost to discourage its cultivation in some parts of the United States." The most common enemies of the Plum in this country are black and green aphides, thrip, and red-spider. As I have already given recipes for the destruction of these, in the articles on the Apple and Pear, it is not necessary to reproduce them here. The *curculio tenebricosus*, or apricot weevil, as it is sometimes called, is frequently injurious to the Plum in old gardens. In winter it is generally to be found in the old nail-holes or crevices of the wall, where they lodge in numbers. The best way to get rid of them is to get the walls freshly pointed, so as to bury them over with the mortar, from whence they cannot escape. They are also to be found under the loose bark of the tree, when bark and all should be removed and burnt. After this the tree may be washed down with hot water, and a portion of the soil removed and burnt, so that those which may have fallen to the ground may be destroyed.

Tortrix Wæberiana is a small brown moth which often proves very injurious to the Plum, and is not unfrequently the cause of gum exuding. It penetrates to the inner bark when in its caterpillar form, and feeds thereon. From the wound made the sap escapes, and the result is often the formation of gum. Their presence is easily ascertained by the appearance on the larger branches and trunk of a reddish dust. Where this is deposited, the enemy is sure to be at work. By thrusting a needle into the holes made on the branches the grub will be destroyed, and painting the branches with a solution of lime in May and September has been recommended for destroying the eggs.

Tenthredo morio, or Plum saw-fly, is destructive to both fruit and flowers, depositing its eggs upon the calyx of the latter; while the larva, as soon as hatched, penetrates into the interior of the fruit, and, feeding thereon, causes it to fall off, after which it buries itself in the

ground till spring, when it reappears as a moth. Gathering the fruit as soon as it falls and destroying it will be found the best means of getting rid of this pest.

JAMES M'MILLAN.

(To be continued.)



"MY GARDEN" IN WINTER.

As I write, my garden lies locked up in the icy bands of the hard frost, and all the pretty smiling flowers are laid low. A few days since and it was different, for then my eyes were gladdened with the sight, here and there, of a few of the blossoms of the early single crimson Primrose, or a Polyanthus, or sweet-scented Violet. Till then, the latest of my summer stocks yielded me flowers, so did the Tom Thumb Antirrhinums; whilst the Pansies, prematurely gay, gave a promise of the many beauties they will assuredly unfold in the coming spring. So fair and serene had been the prevailing weather, that it did seem we were about to glide gently into the pleasant months of spring without a check or taste of winter; but we have since been taught a sharp and salutary lesson, and when I write of "my garden in winter," it is winter indeed. My garden is not large or extensive; it admits of but little variety, but it forms for me no inconsiderable portion of my floral world, and whatever I do therein is matter for deep consideration and forethought. I love my garden, and want to extract from it the greatest possible amount of pleasure and enjoyment. It is not enough that it should yield me Crocuses and Tulips in the spring; Pelargoniums and Verbenas in summer; with Asters and Dahlias in autumn: I want to have ever in it something that shall by its beauty, however simple, yield me that satisfaction the cultivation of flowers invariably affords. I have a little greenhouse as well, now and always full of plants that never fail me. There are the remains of the bloom of this year's produce upon my Pelargoniums, and they will continue to give me flowers for a few weeks yet to come. There are also some dwarf Tropæolums for next year's propagation that will, throughout the entire winter, send up their bright golden, orange, or scarlet blossoms, as if in defiance of the external cold; and here and there are a few other plants, some in flower, and some with pretty ornamental foliage, memories of the summer that has departed. And then I have my batch of Primulas, many of which are just now beginning to expand their flowers,—the commencement of another year's delights, that shall not fail me as long as the winter and spring lasts.

But I write mainly of my external garden, a depository of hardy

plants, making up my winter bedding-out. I am naturally anxious to look more gay than my neighbours, though they are fast catching my winter-gardening mania; and I want especially to show the passers-by that I have sufficient versatility of invention to have something fresh in design year by year. Even now, in these dull leaden months of autumn, I take a pleasure in noting the many pleased and wondering faces who gaze into my garden, and who, whilst admiring its appearance, strive vainly to guess what this row of plants, or that lot in a bed, may be. And I can observe the same faces coming from week to week to take a peep how things are progressing as the spring months advance, when my garden shall be full of flowers, and gay and pleasing to the eye. I like hardy foliage-plants, for winter work especially; they look nice at all times, but how much more so when all else seems so sterile! Just inside my entrance-gate I have a border edged with *Sempervivums*, *Montanum* and *Californicum* alternately, and very pretty they look; next this a line of *Echeveria secunda glauca*, its greyish-white foliage looking prominent in the darkest weather—a capital thing for winter work, as it is quite hardy. Then for contrast the dark-leaved *Ajuga reptans*, a very useful plant for foliage work, and one that is almost essential, from the peculiar hue of its foliage. Behind this is a row of the Golden Feather *Pyrethrum*, a fine acquisition to the flower-garden, and for winter and spring work especially; then I have a background of crimson-stalked Beet, a fine hardy foliage-plant, that will show off the bright golden hue of the *Pyrethrum* to the best advantage. A little farther in, just under the front of my cottage, runs a narrow border which I have edged with a broad margin of that prettiest of all the *Sedums*—*acre aureum*, or the golden-tipped form of the common Stonecrop, *S. acre*. What a gem this is for the hardy winter garden! every one of its little points seems to glisten in the light as though it were tinted with gold; whilst for vases, pans, or rockwork, it is invaluable. Then, next to this, I have a row of the red-foliaged *Oxalis corniculata rubra*. This serves as an excellent set-off to the gold of the Stonecrop. I use late seedling plants for the purpose, as they retain their foliage much more perfectly during the winter months. Next this, at the back of it, is a line of *Myosotis Azorica*, a very dwarf light-blue variety of that pretty family of Alpine plants. I rather fear, from present appearances, that it is scarcely hardy enough to stand the rigour of winter; but as all its young growth remains fresh and green, there is still hope. On the opposite side of the walk a broad border required filling with more material than my foliage-plants would cover, so I judiciously introduced flowering plants at the back, beginning from behind with Young's blood Wallflower, and then a line of strong plants of *Viola cornuta alba*,

then *Viola cornuta* fronting that, with *Viola lutea* next this, and using *Ajuga reptans* again to throw it up by contrast, and in front of it another pleasing gem, the golden-blotched double-crimson Daisy *Bellis aucubæ-folia*. This is just one of those pretty things that must always have a prominent place in my winter garden. Writing of this Daisy, let me here mention that a neighbour of mine has developed its capacity to propagate itself to a wonderful degree. Just two years since he possessed three small plants only, but by dint of constant attention, and especially a liberal use of house and yard sewage, he holds now a stock, derived from the original three only, of over one thousand, all strong plants. This fact will show that the talk about this Daisy being "miffy," as it is termed, is wide of the truth.* I also use largely for edging purposes for my walks the *Stachys lanata*; it does admirably in my dry soil. I should like to commend this plant as an edging to all amateur cultivators and cottagers who may wish to have their gardens look neat and tidy. Pansies are with me a strong feature for spring blooming, and good rooted plants put out early will often give me a few stray flowers right through the winter. One border filled with them has a line of a seedling crimson, and another of a seedling light of my own: with these are also a fine new variety that promises to be the best white bedding pansy out, and also the Cliveden yellow and Cliveden blue varieties.

One of the prettiest of all my winter blooming plants is the single crimson Primrose. Strong plants of this will commence blooming in November, and will continue throwing up their lively bright crimson flowers at every gleam of winter sunshine. Then there are several varieties of the early blooming double Primrose, that will soon be challenging my admiration; and not a few of the gold-laced Polyanthus, that are always pretty, early, and acceptable. I cannot find space to closely enumerate all the winter plants that my garden possesses, but mention must be made of charming *Myosotis dissitiflora*, so early, fine, and free-blooming; *Silene pendula ruberrima* and *S. pseudo-atocion*, the last one a capital acquisition, the colour almost magenta, and of better shape than the rest.

Perhaps the best time to say more about my other blooming plants will be a few months later on, when all are in bloom. About April I expect my garden will be very gay. When the sweetest notes of the early song-birds are being first heard, when all nature is putting on her choicest garb, and the earth is lovely with her works,—then will I again revert to this pleasant theme, and picture how my garden looks when the full flush of floral beauty is on it. A. D.

* Despite A. D.'s statement to the contrary, everywhere about Edinburgh this Daisy has proved utterly unmanageable, and nearly every one has given up its culture in despair. It evidently requires a warm light soil, and a cool moist situation, but not a wet cold one.—[Eds.]

THE KITCHEN-GARDEN.

NO. VIII.

POTATO CULTURE.

HAD any one foretold that a small tuber occupying an insignificant space—and scarcely, if at all, used for human food—in the newly-discovered regions of South America, should become in the comparatively short time of two centuries one of the most important items in the daily food of millions of the human race for succeeding generations, it would have sounded very incredible. Such, however, has been the career of the Potato, which, as a tuber, is one of the most essential importance; so much so, that it ranks next to the cereals in its influence as a vegetable product on the populations of temperate climates. Yet, strange to say, its introduction to Europe was met with the most obstinate prejudice and opposition, particularly from the French, and it was not till a time of great scarcity and necessity during the great Revolution that the culture of the Potato was anything like general in France. It has been affirmed that the Potato has added millions to the populations of Europe, and that, owing to its extensive cultivation, famines have been rendered far less frequent. It is, however, well known that too great a dependence on it as a substitute for corn—as, for instance, in Ireland and the western isles of Scotland—during the time the murrain so much prevailed, has led to famine and hardships of the severest kind. Still it continues to be a crop of the greatest importance as far as remunerative farming is concerned, and in not a few districts the farmer's balance-sheet is very much affected by the Potato crop and market. To meet the wants of our large cities, the cultivation of the Potato has increased thirty-fold in some localities within as many years. At one time, four or five acres on one of the far-famed East Lothian farms was considered a sufficient proportion, while now eighty to a hundred acres is quite common.

The remarks which I shall make on the culture of the Potato are more referable to it as a garden crop, while some general remarks will apply to its cultivation on a more extensive scale; for the most intelligent agriculturists admit that it is to the cultivation of the garden, more than to any other source, that they must look for improved methods of cultivating their farms.

Most gardeners are expected to furnish new or early Potatoes throughout the early part of the year, onwards to the time when they can be dug from the open borders without any protection. There are two or three methods which may all be adopted with advantage in

keeping up the supply when Potatoes are required very early. The stemless or pitting system, by which young tubers are produced very early, is sometimes practised, although the produce obtained in this way has little to recommend it beyond its earliness, and, perhaps, novelty. By selecting a quantity of the largest of last season's produce, keeping them in a cool place, rubbing off every signs of sprouting at frequent intervals, and thus preventing their ever making a growth, the stored-up elements of the tubers are not expended, and all that is then necessary is to place them in circumstances which will cause the energies of the parent tuber to be expended in producing new ones, without making any tops at all. This is effected by taking them in September, and mixing them up among finely-sifted and rather dry soil, in the corner of some dark shed or cellar. A layer of the soil, about 4 inches deep, is first placed on the floor, then a layer of the tubers about 2 inches apart, then another layer of soil and Potatoes alternately, till the desired quantity is so pitted. Under these conditions, young tubers are formed from the eyes of the old ones, and may be sent to table at the New Year. This is, however, a method which is seldom practised, which does certainly produce young Potatoes, and that is about all that can be said in its favour.

The practice generally pursued is, to select a quantity of the finest of the earliest-ripened sets at the end of the year, which, even in a cool place, will then be starting into growth. These are potted singly into small pots, rubbing off all the buds except the earliest and strongest terminal one, and are then placed in a pit or any other structure where they can have a temperature of 55° and a slight bottom-heat. Here they soon start into growth, and when 3 or 4 inches high, they are shifted into 8-inch pots, in which they mature their crop. The soil used should be free, and water should be supplied moderately, or the tendency will be towards a drawn and sickly growth. As the tubers become fit for table they should be kept dry, otherwise they will be watery and insipid. In this way an early crop or two come in early before those in pits and frames are ready.

For moderately early crops, the best way is to grow them in pits which have hot-water pipes which can supply top-heat, and 2 or 3 feet of leaves for bottom-heat. When grown in this way, a portion of the space at command is prepared in the end of December, or early in January, to receive a planting previously started in small pots in some of the forcing-houses or pits. They should be planted out when 2 or 3 inches high. To succeed these another lot should be planted at the same time, which have commenced to spring on the shelves of a store-room. In all these cases none of the buds should be allowed to grow, except the earliest and strongest terminal bud. And Potatoes, especially

when intended for early forcing, should not be stored in heaps, but be kept in a light place in single layers. In this way there is no danger of the buds becoming elongated and weak when they commence to grow. After being planted, air on all favourable opportunities should be admitted to them ; for if allowed to become drawn and sickly in a close damp atmosphere, no after-treatment will cause them to produce a satisfactory crop. When coming to maturity, the soil should be allowed to become dry, and the lights drawn off for a portion of the day when the weather is fine, which will help to give quality to the tubers. It may be remarked that if the Potatoes are planted 7 inches deep, they will require little or no moulding up, for that is an operation attended with more or less injury to the stems and leaves ; and if the tubers are covered with sufficient soil to prevent greening, it is sufficient.

To succeed the crops in pots and frames, a quantity should be started either singly in small pots or in boxes, and planted out in some warm sheltered spot about the middle of April. They may be 3 to 4 inches high when planted out, and till danger from frost be over, they will require protection by some means at night. These will keep up the supply till those planted in the usual way for general early crops are ready to use. I am not an advocate for springing main crops of early Potatoes to be planted in March more than half an inch, and even that without putting them into heat. It is easy to have them sufficiently sprung by selecting seed from the early crops of the previous year and keeping them in a dry airy store-room, where they start into growth far stronger.

Touching upon the general routine of Potato cultivation, it may be laid down as a rule necessary to first-class results that the soil should be an open deep loam, well drained, rather inclined to be sandy than otherwise, and that it should be trenched 2 feet deep, and well pulverised. The crop should be planted in ground that has been well manured for a previous crop, and no more manure added for the Potatoes. One half of the manuring in the field culture of the Potato is worse than useless. It is generally done in dry weather in April, when the manure gets dried before it is ridged in with the plough. In light dry soils I look upon the ridge system as very objectionable. The manure and sets are enclosed in a dry state in an elevated ridge, where the manure, once dry, is not easily wetted, and where in a dry season it can be of little use to the crop. Indeed, I have seen it turned out again in autumn almost as dry and entire as when it was covered up in spring, and under such circumstances it only served as a means of starving the Potatoes. If the crop were planted in the flat—as in garden culture—on light dry soils, instead of in ridges, it would give heavier crops. The manure would then be far more likely to serve its

end, but more likely still if it were well incorporated with the soil the previous autumn.

In gardens, particularly where the soil is usually richer than is good for the Potato, wide planting is desirable. Earlies should be allowed 2 feet 10 inches, and later sorts 3 feet, between the rows, and 15 inches between the sets for late strong-growing sorts. By planting them wide the tops get plenty of room, and the crop is much heavier and sounder, and there are fewer small and unsaleable tubers. In working and cleaning the ground while the crop is growing, the loosening, by forking or grubbing, should be done soon after they are above the ground, and not deferred till immediately before moulding up. The system of grubbing up close to the stems of the Potatoes after they are 1 foot high tears up the stringy roots on which the young tubers are formed, and does a vast amount of harm. In gardens where there is not so much of a breezy circulation of air, the absence of which, with a rich soil, produces a rank and more watery growth, the crop should be carefully looked over when 2 or 3 inches above ground; and whenever more than two stems have come up from one set, they should be pulled away.

Seed should be always saved for the earliest crops from the corresponding crop of the previous season; and were the seed Potatoes selected at the time the crops are taken up, and carefully stored by themselves in dry airy places in thin layers, instead of being pitted in great bulk along with the Potatoes, either for use or sale, we should hear less of weak blanky brakes and fields of Potatoes. For early crops of the kidney varieties, the very largest sets should be chosen for seed. There is no greater mistake in Potato culture than that of selecting small sets or cutting large ones. I have proved this over and over again, and any one can put the matter to the test by planting a quarter of a field of Potatoes, beginning at one side of the quarter, and planting a row or rows of very small sets, and then a row a size larger, and so increasing in size till the largest is planted. It will be found at harvest that the small sets give the poorest crop, and the largest proportion of small unsaleable tubers; and the yield of the whole will just be, in this respect, in proportion to the size of the sets. The cutting of sets is not at all necessary for garden culture at all events, nor attended with much, if any, profit under any circumstances, and it is attended with great evils. The tuber that is cut loses much of the sap, which it is of great importance to retain; and, in dry seasons especially, cut sets are more likely to perish from what is termed dry-rot. The bleeding set is frequently encased among dry manure, and in a dry ridge of soil; and unless a soaking of rain wards off the evil, blanky fields are the certain result. The sap is sucked from the

Potato by the dry surroundings, and it never comes away. To cut Potatoes for seed after they have been allowed to grow 4 to 6 inches in pits, as is often the case, cannot but be regarded as the most irrational practice possible.

The varieties of Potatoes now grown and offered for sale, some under two or three local names, are very numerous ; yet the sorts which may be regarded as sufficient to supply a family till the field-crops are ready need not be numerous. The True Ash-leaved is probably yet the best for early crops. Though some sorts are a little earlier, I have never tried any combining so many good qualities so early. As a second early Kidney, Mayatt's Early is very good, and so is Mona's Pride. To succeed the two latter, the Lapstone Kidney stands unrivalled for fine quality, and is a good cropper. Among early round varieties the Bloomer, *alias* Curl Top, *alias* Coldstream Early, is a very good and early round Potato ; but round Potatoes are not admissible in first-class dining-rooms while Kidneys can be had. Daintree's Early, American Early, and Dalmahoy, form good successions in the order named, and are all excellent croppers, and good in quality. A variety known in some localities as Rosse's Early, but which scarcely deserves being called early, for it is not ready till August, is a great favourite of mine. It is an enormous cropper, and splendid in quality. At Archerfield I grew this variety from the largest sets I could select, planted whole, 3 feet by 1 foot 6 in., a few rows annually to produce large tubers, to bake with their jackets on, and serving up whole. One season I produced one tuber weighing 3½ lb., and out of a few barrowfuls off the same small piece of ground I picked out forty-eight tubers which weighed 44 lb.—some considerably over 2 lb. and some less ; and every Potato was solid to the core, and there was scarcely a Potato amongst them that could be termed small—a result brought about by a succession of years, wide planting, and large sets. D. T.



GESNERA ZEBRINA.

I HAVE at the present time two or three dozen pots of this most beautiful and useful plant in full flower, and never have I before succeeded so well with them. I attribute this success to some alteration in my mode of treatment which I have adopted this season, and I shall be glad if you will kindly spare space in the 'Gardener' for the little I have to say on the matter, hoping it will prove of use to all who are interested in winter-blooming plants. During the last week in March 1869 I put the tubers into a common cutting-box, and placed it in a warm pit,

and there it was kept till the tubers had made growth fully an inch in height, the surface of the box being completely covered with foliage ; and it might have been mistaken for a small bed of some new variety of *Anæctochilus*, the box looked so pretty. I then transplanted the tubers into their flowering-pots, placing the plants singly in pots 5 inches in diameter, and three and four in a pot 8 inches in diameter ; they were then placed in a Melon-pit, watered, kept close, and shaded for some days, and when the Melon plants required all the room, the *Gesneras* were removed to another division of the pit ; and it is in this part of the treatment I consider the germ of success lay ; for instead of being treated like stove-plants, they got only such treatment as is usually given to soft-wooded greenhouse plants in a pit ; in fact, the remaining space of the pit in which they were placed was filled with such plants, and there was always plenty of air given by day, and some continued all the night. Under such treatment the plants made fine growth, and were put into the stove in September, but only because the plants were touching the glass of the pit. I would have liked to have kept them there longer—at least a fortnight—and was compelled to remove them for the cause stated.

The point I want to advance is this : That hitherto I have treated the *Gesneras* as stove-plants, but after my experience of this season, the summer treatment will be, as I have indicated, as long as I shall grow them, subject to any fresh discovery I may make. The soil I use is peat-loam and leaf-mould—of each an equal part—with some rotten cow-dung and a good sprinkling of silver-sand.

There are a few other winter and early-blooming plants I may have a few words to say about at some future time. We want in the 'Gardener' short suggestive papers, not only about winter-flowering plants, but about many other things quite as useful and interesting, in which the writers can give their own special treatment of things new and old, in the management of which they have proved successful : for example, such as the short articles on "Neglected Plants." Useful and instructive as the 'Gardener' is already, it would become much more so if my suggestion could be acted on.

J. H. C. P.

[Many thanks ; and we sincerely hope to hear from our correspondent again. At the Exhibition of the Liverpool Horticultural Society on November 23, prizes were offered for three pans of *Gesneras*. They were, however, but poorly represented. Our correspondent has taught us something that we hope may produce better results at Liverpool in November next.—EDS.]



THE SURFACE CROPPING OF VINE-BORDERS.

HAVING read with much interest the remarks of Mr Simpson on the cropping of fruit-tree borders, and wishing all sensational matter to be put on one side, I venture to ask this question, Can we, as practical men, recommend the wholesale, or rather universal, cropping of fruit-tree borders? For myself, I say, No! though having, like Mr Simpson, to cultivate in an uncongenial climate, where, as he truly observes, early borders are valuable. In my own experience, as well as in that of other gardeners, good crops of vegetables have been taken from borders on which good trees and fruit were likewise produced. Now it is a well-known maxim, held by nearly all cultivators of fruit-trees such as the Apple, Pear, Plum, Cherry, and Peach, that the trees are made more fruitful by root-pruning, judiciously performed; and with such, moderate cropping of the borders is not condemned, but rather to be commended on the ground of economy. Still, I think he must be a bold man who would propose to root-prune Vines. Yet I consider the digging of the generality of well-made Vine-borders a good spit deep to be only root-pruning under another name. Living as I do in the north of England, in a county well described by the Squire's Gardener as sloping to the east, and the subsoil cold clay, where there is any depth of it, and where in the shallow parts we find the magnesian limestone, and have coal-mines and manufactories increasing on every hand, and not by any means improving the climate—I assure you I am very glad, like many others, I have no doubt, to give my Vine-borders the full benefit of the sun's rays during the summer. Here the Vine-borders are always covered with non-conducting material, and a tarpaulin early in October, and I don't feel justified in uncovering them till April or May, so that the period for vegetable culture on the borders would (if I attempted it, but I don't) be but a very short one. There is no doubt but that it has been done, and can be done again, in favoured localities. I have seen good black Hamburg Grapes ripen out of doors in the south of England, where the roots of the Vine had penetrated into a gravel walk, but of course such a result depends mainly on a good season. And so in the case of Grapes grown in a well-cropped border, there must be a good season to aid their development; and in the case of a wet summer, like that of 1860, if the Vine-border were cropped with Potatoes and Peas, as recommended by W. S., they would keep every ray of sunshine from the borders, to the great detriment of the Vines. Before I conclude, I should like to ask Mr Simpson a simple question—this: Suppose he had to make Vine-borders and plant young Vines in a place in which he had just entered on the duties of gardener, and had a reputation to make, would he commend cropping these borders, though we all know new soil is fine for Potatoes? I ask this question as a practical gardener, because nowadays employers want to know the reason why; and if such an authority as the 'Gardener' can be instanced by them as recommending the cropping of Vine-borders, they would naturally enough be led to ask, Why cannot my gardener do the same? I consider that in the case of many places, were this system of border-cropping carried out, it would be like putting a load on the shoulders of many a weak brother, and increase his difficulties. It is one thing to crop one border of late Hamburgs where there are plenty of Vineries to fall back on if this fails in consequence: it is quite a different affair where one, two, or even three Vineries represent the whole of a gardener's resources, and these generally of mixed varieties, and where even a partial failure of the crop would be a serious affair. In conclusion, I consider it false economy to recommend the universal cropping of fruit-tree borders.

R. M. S.

NOTES ON HARDY HERBACEOUS PLANTS.

Hottonia.—So far as is at present known, this pretty and interesting genus of aquatic plants comprises only two species—the one a native of North America, and unknown to cultivators in this country; the other inhabits ponds and sluggish streams in England and Ireland and other parts of central and northern Europe. *H. palustris* (Water Violet) is the European species. It is valuable for introducing into ponds and streams where aquatic vegetation is desirable, being interesting and ornamental for a long period during summer. The leaves and barren branches are all submerged; the former are deeply cut into fine thread-like segments, giving a feathery appearance to the submerged growth, and suggesting strikingly the other common name (Featherfoil) by which it is known in some parts of the country. The flower-stems are leafless, and rise erect above the water, bearing several whorls of rather large flowers, deeply divided into five broad lobes. The flowers are variously coloured in different individuals—pale purple is the most common colour, but blue and white and pink are also to be met with, and they appear in June, July, and August, and often also in September. It is easily propagated by division, and also by seeds. If the latter method is adopted—and it is the simplest, if they have to be transported a distance—they should be sown immediately they are ripe in the quarters they are to occupy permanently, the only care requisite being the prevention of the washing of the bottom by floods if the pond or stream in which they are sown be liable to such disturbance, and the destruction that would be caused by waterfowls, till such time as the plants are strong enough to take care of themselves, which they will be the year after sowing.

Globularia.—These are charming little Alpine plants, distinguished, as the name implies, by the inflorescence being gathered together into compact globular heads. Some of the species are not hardy in all parts of the country, and the following should be avoided in making selections for cultivation in the open air north of London, unless the climate of the locality is mild in winter and the soil light and warm:—*G. Alpum*, *integrifolia*, *longifolia*, and *spinosa*. These are likely to succeed well in the southern parts of England and in many parts of Ireland, but, except in the more favoured parts of the west of Scotland, they are likely to succumb to the bad effects of our winter climate in the north. The majority of the hardy species are best adapted for the rockwork in most parts of the country, and most of them succeed well in the open border in light rich naturally well-drained soil, where a little shade can be given them. They are pretty things in pots, and in wet cold localities they will not live for any length of time, unless

kept in pots for handiness for winter protection. Rich peat and loam forms the best compost for them in pots, and it should be well sharpened up with rough gritty sand. They are easily increased by division, which is best done in spring as growth commences, and attention to watering will be necessary for some time afterwards till the plants are fairly established.

G. cordifolia is of somewhat creeping habit, rooting at the joints as it extends. The root-leaves are wedge-shaped on longish stalks, blunt and toothed at the points. The flower-stems are about 6 or 8 inches high, clothed at the base with leaves, similar in form to, but smaller than, those of the roots. The flowers are blue, and appear in June and July; suitable for the mixed border as well as for the rockwork, but a somewhat shady situation should be chosen for it. Native of Germany.

G. nudicaulis.—This is rather a stronger-growing species than the last named. The root-leaves are lanceolate, on short footstalks, and the flower-stems are nearly naked, having only a small lanceolate bract or two under the flower-heads. The flower-heads are large, dark blue, and appear in June and July. Native of Germany, and adapted alike well to the rockwork or mixed border, in partial shade.

G. nana is a very diminutive species, forming dwarf carpet-like patches of small, bright-green leaves. The flower-heads rise only an inch or two above the foliage, are not large, but profuse, are pale-blue or lilac, and appear in June and July. Native of the mountains of France, and suitable only for cultivation on rockwork, or in pots in gritty peat and loam.

G. vulgaris grows about 6 or 8 inches high. The lower leaves are stalked and lanceolate, the upper ones stalkless and smaller, but of the same form. The flower-heads are dense and bright-blue, appearing in May, June, and July. Common on the mountains of Europe generally. Adapted for cultivation on rockwork or in the open border where a little shade can be secured.

Vinca.—This is the only British representative of one of the most beautiful natural orders in the vegetable kingdom, Apocynaceæ, which comprises many splendid and justly-favoured shrubs and climbers, well known in our stoves and greenhouses. Like most of the other genera of the family, *Vinca* is more ligneous than herbaceous; indeed, only one species of the group may be properly classed with herbaceous plants, according to scientific rule, but their dwarf habit and natural adaptability to similar purposes bring them nearer to that class of plants than to shrubs of any kind. They are most accommodating in their nature, growing freely in nearly all kinds of soils and

situations, preferring moist, shady places, but not refusing to grow freely in those more dry and exposed. They grow freely in the shade and drip of large trees, and may be used for clothing naked banks with great facility and success. Several fine variegated forms also of the hardy sub-shrubby species may be used with great effect for those and for more select purposes, such as the edging of beds and borders of shrubs, draping rockwork and rustic work, and even for the edging of beds and borders of flowers. All are easily propagated by cuttings, in the autumn or in spring, in a cold frame or under a hand-glass kept moderately close and shaded till the process of rooting has commenced, and by division either in autumn or spring.

V. major is the strongest and largest of the hardy Vincas: it grows from 1 foot to 2 or 3 feet high, according to soil and situation. The leaves are broad, ovate, bright shining green. There are two sorts of branches, those growing erect from the roots and bearing flowers, and those trailing and flowerless, and rooting as they extend. The flowers are large, somewhat bell-shaped, and blue in darker or brighter shades. It flowers throughout the spring and early summer. It is a native of England, in many parts, and of the south of Europe and the Caucasus. There are several interesting and valuable varieties of this species. A white-flowered sort, not very common, has a fine effect, mixed with the blue, on banks, or wherever masses may be grown. The *V. major*, var. *elegantissima*, has the leaves blotched and margined with creamy white, and is an elegant plant for many purposes. *V. major*, var. *aurea*, is even more beautiful and effective than the preceding. The leaves are richly marked with golden yellow, which in the spring, when young growth is being made, is very beautiful indeed. *V. major*, var. *reticulata*, is an elegant but not very striking sort, having the veins of the leaves delicately marked with golden yellow. In rich soils and moist shady situations this is not a constant variety, being apt to run green where over-well fed; but in poorer soil, and more exposed places, the effect of the rich colouring of the veins on the dark shining leaf-ground is very elegant.

V. minor, the common Periwinkle, is much more prostrate and slender than the foregoing species, and is, if possible, more useful for covering banks and for planting under trees. The leaves are smaller than those of *V. major*, and they are ovate-lanceolate. The flowers also are smaller, but more profuse: they are also more variously coloured, there being blue, purple, violet, pink, and white coloured varieties. There are also two varieties with prettily variegated leaves, the one creamy and the other golden yellow. It flowers in April and May, and onwards throughout the early summer months. Native of the

same countries as the last, but enjoys rather a wider distribution in northern and central Europe.

V. herbacea.—This is a very different and distinct plant from either of the preceding. The branches are herbaceous, and have a very limited extension: they are prostrate, and rarely exceed 9 inches in length. The leaves are narrow, oblong, lanceolate; the flowers are blue or purplish blue, and appear in June, July, and August. This handsome and distinct plant is best adapted to the rockwork or mixed border, and prefers a light rich dryish loam in moderate shade. Division and seeds are the most practicable means of propagation. Native of Hungary.

Amsonia.—This is a genus of hardy herbaceous plants from North America. Without having any very strong claim to be considered beautiful, they have a certain distinction and elegance in their appearance that renders them valuable for certain ornamental purposes. They may be introduced among shrubs with very good effect, and they may be planted in open woods where their robust hardy nature will enable them to establish themselves when less vigorous plants would succumb before the encroachments of the native vegetation. Any ordinary good soil suits them well, and they are easily propagated by division or seeds in spring.

A. angustifolia grows about 2 or 3 feet high, with hairy stems and lanceolate leaves clothing them throughout. The flowers are produced in small panicles in the axils of the upper leaves, are light blue, and appear in July and August.

A. latifolia is about the same in stature as the last, but the stems are usually destitute of hairs, and the leaves more broadly lanceolate. Flowers blue in the same manner, but the panicles rather fewer flowered, and about the same time.

A. salicifolia has hairless stems, and very narrow lanceolate leaves attenuated at each end. The flowers are numerous in small panicles in the axils of the upper leaves. They are blue, and appear about the same time as the others.

W. S.



HINTS FOR AMATEURS.—JANUARY.

WE have repeatedly urged the necessity of thoroughly turning up ground in which seeds are to be sown early; and those who have allowed vacant ground to remain untouched should after this season lose no opportunity in turning up the soil as deep as possible to the pulverising influence of frost. Where we turned up empty space early

in November, bringing up a little of the stiff subsoil, it is now breaking down like powder, and on these quarters were wheeled large quantities of old Vine-border soil, rich and free—which, mixed with the heavier fresh soil, will make an excellent preparation for almost any crop—Parsnips, Carrots, and Beet especially; and, if the surface is turned when frozen with a steel fork, and finely broken over when dry for seed sowing, we need fear no difficulty in getting the seeds to germinate freely. We never found that extra trenching and working the soil was labour thrown away; but, when advising deep tilth, we would object to bringing up the bottom if it was poor, and the main body of the land kept on short supplies of manure. After heavy rains and snow-storms, defective drainage will show itself. A wet badly-drained garden gives poor supplies of vegetables in winter. Celery rots quickly, and Brocolis are destroyed by an ordinary frost. Much of the ordinary operations will be influenced by the prevailing weather. Snow and rain will put a stop to ground work, but in most gardens there is much which can be done under cover at this season—such as preparing stakes, pegs, and shreds, where they are used; looking over roots in store—such as Dahlias, Gladioli, and Ranunculuses, the latter picked over and prepared for planting, keeping the best roots for show-beds, and the smaller ones to be planted for keeping up stock. Old soil from under potting benches or other places might be cleaned by sifting out the rubbish and placing it in a heap for ordinary purposes—such as covering over seeds in heavy wet soil, covering Peas and Beans to protect them if they are coming through the ground when weather is severe. We have seen in nurseries, where good soil was not easily secured, large quantities of common plants grown in the waste soil, which, when all prepared and mixed, was very good for many things, the mixture being generally composed of loam, peat, and sand: a little charcoal added was of great service. We have known many amateurs about towns have no other potting-soil than they took from their gardens, and the greatest difficulty in dealing with such material is its being liable to become waterlogged and full of worms. When such make-shifts have to be depended on, the best and cleanest of the soil should be taken and spread out thinly on a hard surface, there exposed to frost, taking it under cover in frozen cakes, to be afterwards kept dry. The parings of walk-edgings, when partially rotten, or any old turf from road-sides, should be added to, and well mixed with, the heap. Charred prunings are also very useful in such cases. Early Peas should be sown on an early spot towards the end of the month. This sowing often comes in as early as, and produces finer crops than, the seed sown in November. Mazagan or Dwarf-fan Beans should be sown in rows from 2 to 3 feet apart. If Potatoes are wanted early,

a bed may be made for them with leaves and a little manure, making it thoroughly firm. Very little heat is necessary, but the sides of the frame or pit may be well packed round with straw or litter to keep out frost; and while the bed is settling down, the Potatoes may be placed in a little warmth to sprout, covering them over with a little light soil of any kind, but not leaving them till the roots get matted together. 8 inches to 1 foot of soil in the frame is abundance, and over the surface Radish seed may be sprinkled, and lightly covered. Early Frame and Short-top Radish answer well for this early sowing. Few Potatoes are better for early work than the true old Ash-leaf Kidney. Potatoes for seed should be kept as cool as possible, of course excluding frost. Being allowed to shoot far, and then suddenly planted out in the cold ground, is one of the principal causes why they come up patching, and many of the tubers perish in the soil. Early Carrots, if required, may be sown in light soil where they can be protected. Fennel, Mint, and Tarragon roots may be lifted, potted, and placed in a hot-bed or any other heat, and brought on for use. All beds of herbs should be trimmed and surface-dressed, or divided and replanted any time before growth commences. Chicory and Endive may be taken under cover, and kept from light and air to blanch. Rhubarb and Sea-Kale, to keep up supplies, require timely attention, as formerly advised. The latter is easily managed when placed in large pots, and covered with others of same size, and taken into warmth to spring; and it can be retarded by taking it to a cooler place till used up, always keeping it from light and air. Our earliest was taken in this way to the flue of a Mushroom-house, and several good dishes cut off before the main supplies were ready at the end of November. Mitchell's Early Rhubarb has done good service since the beginning of December, and is now succeeded by Prince Albert and Linnæus. Roots of Victoria are dug up and under protection, to be taken into heat as required to keep up the supply during the remainder of the season. Cauliflower in frames or under hand-lights should never be without air, except in frosty weather. A little dry litter placed among their stems would be of advantage. Some sprinkle coal-ashes among the plants, which makes unkindly quarters for slugs. All Brocolis, Kale, Savoy, and similar plants, may be benefited by having earth drawn round their stems, which will help to save them from frost. Brocolis which may be hearting should be looked over frequently to secure them before frost destroys the heads. Hot-beds for Early Cucumbers, &c., may be made at once, but where material is scarce, it would be better to leave hot-bed making alone for the present. Where tree-leaves, manure, &c., are plentiful, a quantity may be thrown up and mixed together; and when the heat is moderate, the whole may be thrown into a bed, building it square, and a little

larger than the frame, shaking and building firmly as the work progresses. A good bed from 4 to 5 feet high will last a long time, but to last for 10 or 12 months in good order, we prefer making our beds 6 feet deep. Regular attention to placing linings of hot dung all round the bed is of great importance in keeping the heat steady. After the frame is placed, a few inches of soil may be placed over the surface of the bed (we use turf, and beat firm with the back of a fork). Mounds of good earth, turfy loam, and a little leaf-soil are very suitable for Cucumbers, placed in the centre of each light; and when the heat is right (which can be ascertained by placing a thermometer in the soil, and when it stands 80° or 85°) it may be considered safe to plant. A quantity of soil may be kept in the frame to add to the mound as the roots find their way through. Pinching out the tops of the plants will induce them to throw out fresh shoots which will show fruit. Young plants are raised by sowing two or three seeds in small pots, and when up, and fit to handle, they are potted singly, always using the soil and water in a warm state. Seeds placed singly in small pots of warm soil are easily managed, without checking the plants when shifting them. Air is necessary at all times, especially if the steam rises strongly from the bed. Covering up from frost is necessary, but light should never willingly be excluded when it can be admitted. Moisture should be carefully applied to the roots: little will be required till the plants are growing freely and the weather fine. A top heat of 65° to 70° is safe, rising 10° or 15° with sun heat. Melons may be treated in the same way, but they require heavier and firmer soil than Cucumbers. Neither of these plants should crowd together, as when the stems become matted they are difficult to manage.

Fruit-trees infested with moss should have as much as possible of it scraped off with a blunt knife or piece of iron hoop, and the parts well dusted with fresh lime, or lime-wash may be laid on with a brush. If the appearance is objected to, a mixture of soot may be given. The old earth from the collars of Gooseberry bushes is taken away by some, and replaced with fresh soil, as a preventive from caterpillars. Fresh planted trees requiring stakes should not be neglected, as the roots would be seriously injured. Mulch carefully to keep out frost. All pruning and nailing should be brought to a close as soon as the weather will permit. Pears which are thin of fruit-buds may remain till later in the season, when inexperienced hands can prune with more safety: the buds then will be swelling, and show themselves. Peaches and Apricots which have been taken from the walls to retard them till they are pruned should not be left to the force of the wind, but be tied in bunches to the stronger wood till they are to be tied up permanently. Walls should be freed from moss, or

anything that will harbour insects. Repairs, where practicable, should be made on walls, filling up all holes, leaving no quarters for insects of any description. A good syringing with soap-suds will help to destroy eggs of insects. Some syringe finely in frosty weather, allowing it to freeze into solid ice.

All kinds of bulbs, however hardy they may be, should be protected from severe frost. Ranunculuses to be grown for summer decoration should be planted soon. When weather will permit, the beds should be well prepared with manure, and the soil well turned up to sweeten. Some use entirely fresh soil for these plants, renewing the beds yearly; and, to do them well for exhibition, extra cultivation is necessary. We at one time grew these plants extensively; and to have them late, we planted the roots in March, in soil well-worked and enriched with cow-dung. Carnations and Pinks which are in pots under protection require little or no water at this season, and all the air that can possibly be given. Surfaces should be kept clean, stirring the soil occasionally, and nothing allowed near the plants that would harbour damp. Auriculas under protection must be also kindly dealt with: they are so impatient of stagnant moisture, and enjoy abundance of fresh dry air. No decaying leaves or moss-covered surfaces should be tolerated; and, like all hardy plants when growing in pots, they should be kept free from frost. Chrysanthemums, when done flowering, should be plunged in coal-ashes, and the tops kept from frost. Though they are hardy, good cuttings and suckers are easily secured when protection is afforded. All "bedding" and other plants should have air when it can be safely given. Water should be given in a tepid state, choosing, if possible, sunny mornings to apply it, so that the structures may dry up quickly; but where fire-heat is not at command, it is better to err on the dry side at this season. Lily of the Valley, Roses, Lilacs, Bulbs, and all kinds of plants which are forced at this season, should be brought on gently; and when to be placed in cooler quarters to flower, currents of frosty air should be avoided, as they are very tender when coming from heat. Shrubs and ornamental trees should have timely attention after snow has fallen, as serious injury might be done if the snow is not shaken off. Dead wood may be cleared out, and everything done to enliven the pleasure-garden at this dull season. Stunted shrubs may be helped with surface-dressings of rich material. We apply manure liberally to all kinds of Coniferæ, especially to Araucarias and Wellingtonias. A number of Araucarias here, growing on a sandy bank, have had quantities of manure of late years, which has told wonderfully on their growth. We have lately given each tree three loads of dung and three loads of earth.

M. T.

THE GLADIOLUS.

As a warm lover of this beautiful autumnal flower, and as one of those who have written something about it, I should like to say a few words on the paper by Mr Morris in your last number, inasmuch as while he has been evidently successful in his own cultivation, he is rather sweeping in his condemnation of those whose experiences are of a less happy character.

With regard to the statement, that wherever there is loss, it is occasioned by some carelessness in the management of the bulbs—I must really demur to this, not so much as a vindication of myself as of others. Without doubt, the best Gladiolus-grower we have in the south of England, perhaps in England at all, is Mr Kelway of Layport, in Somersetshire. Last year he grew 50,000 bulbs, and told me he had not a single diseased bulb amongst them, while this year, under precisely the same treatment, he had a large quantity of bulbs so affected; and my excellent friend, M. Souchet, tells me that this year he has an appreciable loss from disease, and I suppose Mr Morris would hardly say he is careless in the growth or management of his bulbs. My own opinion is that it is a disease, somewhat analogous to the Potato disease; that it may be increased by bad management, but that no amount of care can ward it off.

With regard to manuring, I quite agree with Mr Morris that no fresh dung ought to come in contact with the bulbs; but I could secure this more effectually than he has done by placing a good layer of cow-dung beneath the soil, and not incorporate it in any way with it; in fact, treating it similarly with the mode adopted in the case of the Persian Ranunculus, and so allowing the rootlets to penetrate into the layer of cow-dung, and to draw their sustenance from it when most they require such a stimulus. I have tried it this year, and am so pleased with the result that I shall adopt it for the future.

Mr Morris is assuredly mistaken as to the injury occasioned by cutting off the haulm when it is green. He may, of course, easily find reasons why such a practice is bad, as I have known doctors ready to find out reasons for the most diametrically opposite practice in cases of medical treatment; but I can tell him this, that those imported bulbs which he holds up as models are all treated in this way. I have seen acres of them taken up, without any discrimination as to one being riper than another, and I may add that, when left too long in the ground, they are liable to throw out fresh roots, which detracts from the strength of the bulb. My own bulbs are treated in this way, and although I do not pretend to be a better grower than my neighbours, I can speak confidently of the health of my bulbs, both last season and

this; and I have not noticed that those taken up with the haulms green have shrank more afterwards than those where the haulm was withering.

As to the merits of the various flowers we are not likely to differ. I have only to add that, large as some of the new flowers are, they are far surpassed by some which are in process of multiplication, and I do not believe that we have yet reached the *Ultima Thule* of this beautiful flower.

D. DEAL.



GARDEN RECORDS.

NO. I.

BATTERSEA PARK, LONDON, S.W.

IN a paper read not long since before the Central Horticultural Society by Mr Joseph Newton, the well known landscape gardener, who has just returned from a visit to America, occurs this passage on subtropical gardening: "This has been introduced into the London Parks wherever the gardenesque has been employed, but not in the American Parks which I have just visited. Having studied this subject both at home and on the Continent, I am able to speak with some degree of confidence, and I can safely attest that Battersea Park carries off the palm for subtropical gardening." That is certainly a flattering testimony to the genius and ability of Mr John Gibson, the superintendent of Battersea Park; and the general impression will prevail that it is a truthful one. Having for ourselves inspected Mr Gibson's handiwork, the first of our "Records" shall be some account of what has been done at Battersea Park in the past summer, and how it looked on the occasion of our visit at the end of September.

Entering the Park in company with Mr Gibson from the Chelsea Suspension Bridge, we were conducted along the east end of it, by the Brighton Railway, through what has hitherto been something akin to a neglected waste, but which was then being changed in its features, for the excavators were at work, and bent on giving a new character to the aspect of the scene. What had been a rough uneven bank was being converted into a broad walk, between banks of shrubbery and ornamental trees; and about half way along the distance was the spot where it is intended to construct a rockery, with cool shady walks about it, and other accessories. When these improvements are worked out, Battersea Park will have additional features of interest of no common order.

Then issuing into the broad drive on the south side of the Park, which runs from the east in a westward direction, we caught a glimpse of the pile of artificial rock-work Mr Gibson had constructed in a prominent point of that piece of land surrounded by the lake, and which is known as the continent. It is intended to bring a water-fall over the rock-work, and when it is accomplished, it will considerably enhance the appearance of this part of the park. On the opposite shore, and near to where we were standing, a huge shrubbery bank was being formed, with a garden in a lower level between it and the lake; and this will be reached by pleasant winding paths, which were already being constructed.

On either side of the drive many of the hardy annuals used for floral effect during the summer were still gay, especially the varicoloured double *Helichry-*

sums, and that old favourite of our gardens, the sweet *Allysum*, blooming from self-sown plants that had come from the seed shed by the first crop of flowers early in the summer.

Some way along this drive, access is gained to the subtropical department by a path on the right. Roughly, it may be described as a vast amphitheatre, sheltered on every hand by raised banks planted with shrubs, and surmounted by tall and ornamental trees. Advantage was taken of the original features of this spot to form a site for the subtropical work, and where the surroundings were not of the character required they were furnished by artificial means. Year by year some new feature is added, and so year by year there is a progressive development, reaching on to higher stages as each becomes perfected. The beds are on turf, and in many instances are raised considerably above the level of the greensward, while some are on warm sloping banks. A large irregular circle of greensward in the centre, with a broad band on the right hand of the main walk, sometimes narrow, sometimes much deeper in width, gives a general outline of the department. To this has been added in the past two or three years a portion of what is known as the continent, and more recently a piece of Alpine planting, well worthy a visit in the season for the capital representation secured. But of this more anon.

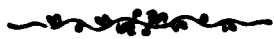
Starting from the point of entry, some vigorous specimens of the bold-foliaged *Aralia Sieboldi* met the eye, which stands the winter without any protection, and has done so for the past five years. From one plant Mr Gibson had obtained the many specimens he now has in cultivation. In a kind of grassy bay, sheltered by protecting banks of shrubbery, were some grand banks of *Cannas*, edged with lines of the *Cardoon*, and variegated *Chrysanthemum Sensation*; and at each end were banks of *Cardoons* as well. This old kitchen-garden plant formed a capital contrast to the dark-leaved *Cannas*. Just by were raised circular beds in a kind of glen. The farthest had as an occupant a huge *Musa Ensete*, the other a huge plant of *Chamærops Fortunei*; between these was a good circular mass of *Coleus Verschaffelti*—round this *Golden-Chain Pelargonium*, edged with *Echeveria secunda glauca*. In front of this lot of beds was a clump of fine plants of *Nerium Oleander* plunged in pots; and there were three specimen *Palms*, as well as specimens of *Yucca gloriosa*, and *Y. recurva*, to complete the picture. This was in reality a garden in itself, and bore much such a relationship to the great garden around it that one of the small chapels in Westminster Abbey does to the lofty and magnificent building that encompasses it. Near this *Wigandia caracasana*, which Mr Gibson terms “one of the kings among foliaged plants,” was very fine. There were two rows of it, each plant about 3½ feet in height, almost filling a long bed, and these were edged with *Plumbago capensis*, and an outer edging of the *Golden-Feather Pyrethrum*. When it is stated that these fine plants were raised from cuttings struck in March last, some idea can be gained of its adaptability for this kind of work. Here was *Aralia Sieboldi* again on some raised slopes—a position which assists it to ripen its wood. It was showing signs of blooming, but it was very doubtful if the flowers would develop themselves before the frost set in. Then came another fine thing—namely, *Solanum marginatum*, so named from having a kind of silvery edging to the leaves, which are spined above and beneath. This is raised from seed one year, and the plants are held over till the next for planting out. Near this was a bed of the pink and buff coloured *Lantana Fabiola*, edged with *Robert Fish* golden-leaved *Pelargonium*—a good thing, with a dwarf and compact habit. A noble plant, too, is *Ferdinanda eminens*, with large spreading leaves. Here was a group of it in the centre of a shield-shaped bed, the plants from 6 to 7 feet in height: round this

was a red-stalked form of the Castor-oil plant, somewhat dwarf in growth; then the golden-leaved Japanese Honeysuckle; the whole edged with *Echeveria secunda glauca*. This was indeed a foliaged bed, a masterpiece of skilful arrangement and fine effect. Then came a large circular bed, having in the centre five large plants of *Musa Ensete*, raised from seed last March twelvemonths. At the feet of this, "the noblest of all sub-tropical plants," was a carpet of *Coleus Verschaffeltii aureus marginatus*, a magnificent mass of bright claret and gold: round this was *Coleus Marshalli*, a somewhat tender variety, yet forming a good mass; the whole edged with *Fuchsia Tom Thumb* of nice compact growth, and blooming freely. This also was a grand bed. Mr Gibson stated that the *Musa* lasts four or five years; then they fruit, and are done with. Next was a long narrow bed of *Canna nigricans*, one of the best dark-leaved kinds, if not *the* best for foliage, though not the best for blooming. This was broadly edged with Mrs Pollock, and an outer edging of the variegated *Veronica argentea*, looking like *Alyssum saxatile variegatum*, and which produces pale-blue flowers in the spring. Here, too, were growing on a low damp spot, and flourishing admirably, two varieties of the Pampas Grass—one the old silvery form of the original species, and one with quite a red tint, which is very handsome in the autumn. Mr Gibson states that *Gunnera scabra* appears to be, with him, much more robust and stronger than the Bulrush of the Nile, though both require some covering up during winter; the former was certainly doing well here. A huge raised bed of Cannas here came in view—a grand object; at the back of the bed was *C. Premices du Nice*, having bright pale glaucous green leaves—one of the new yellow-flowering varieties, and one that throws up suckers from the roots with remarkable freedom. In front of this was *C. nigricans*, making a capital contrast, and edged with *Fuchsia Golden Fleece*, to bring out the dark metallic hue of the leaves of the *Canna*. Near this was a bed of *Erythrina cristi-galli*, in variety, and in fine bloom. These Coral trees were a grand object, and it is found that *E. Hendersoni* is one of the earliest to bloom, and *E. laurifolia* one of the latest. A circular raised bed close by had a centre of *Coleus Saundersi*, perhaps about the only one of the first batch of the Royal Horticultural Society's new varieties worth keeping; round this was a belt of *Centaurea ragusina compacta*, and an edging of *Echeveria secunda glauca*. This was a splendid bed, of perfect arrangement, and remarkably effective. Then about here were dotted some plants of the single scarlet Pomegranate, plunged in pots, and nicely covered with brilliant coloured flowers, something like those of a *Correa* in shape. Some plunged specimens of *Yucca aloifolia variegata* were about and around them. The two, being so diverse in character, formed a nice contrast. Here, too, was a large bed of *Funkia Sieboldi*, that Mr Gibson said had been very fine when in full bloom, and by no means to be despised as a foliage bed. Then came quite a unique bed, of a raised kidney-shape. In the centre was a line of *Sorbus laciniatus*, with very handsome leaf foliage, dense, yet transparent, and can be clearly seen through. This also makes a capital plant for table decoration. On either side of the *Sorbus* was a line of *Geranium anemonæfolia*, with large anemone-like leaves, and pinkish-lilac flowers; the centre of the bed carpeted with a mixture of *Koniga variegata*, and Velvet-Cushion Verbena; next, a line of *Amaranthus melancholicus ruber*, then Golden-Chain Pelargonium, and an outer margin of *Sempervivum montanum*. This was also an excellent bed, and especially when looked at from a distance, the arrangement came out very nice indeed. A smaller bed of the same shape had a broad central band of *Lantana ne plus ultra*, the flowers of which open of a maroon-crimson hue, and change to orange, of upright rigid growth, very free blooming, and dwarf habit. Round this

was Black Dwarf Noddy Pelargonium, then a line of blue Lobelias, and an outer edge of *Mesembryanthemum tigrinum*, so named because each pair of thick fleshy leaves represents the open jaws of a tiger, while the young leaves have the appearance of a tongue between the jaws. Farther on was a circular bed carpeted with *Alternanthera spathulata*: rising above this was a dwarf orange-crimson flowering Canna, obtained from Messrs T. Jackson & Son of Kingston, the species not known; and an edging of *Funkia undula variegata*. Next came a circular bed showing much novelty of arrangement. The centre was carpeted with *Coleus Marshalli*, from the midst of which rose some tall-growing foliaged plant: round this was a ring of *Coleus aureus marginatus*, edged with blue Lobelia; next the Lobelia, Crystal Palace Gem golden-leaved Pelargonium. From the ring of the crimson-and-gold *Coleus* rose a circular line of standard plants of *Acer negundo variegata*, about 3½ feet in height, enclosing four nice plants of *Dracæna Cooperi*; thus the bright-coloured leaf-foliage of the *Dracæna* was looked at through the silvery veil of the foliage of the *Acer*. It was a very fine bed indeed. Next came a raised long oval bed arranged geometrically; running through the centre of the bed lengthwise was a chain, the links formed alternately of circles and diamonds, the outline of the chain formed of *Veronica incurva*, the three diamond beds filled each with *Eclat* and *Grand Duke Noddy Pelargoniums*—both new of 1868, but scarcely effective as bedders—and *Triumphans*, a grand bedding Zonal Pelargonium, with flowers of a soft yet brilliant orange-scarlet hue, and very free blooming, and dark zonate foliage; and the four circular beds filled with double-flowering Pelargoniums—viz., two with *Gloire de Nancy*, and two with *Rose Queen*, in the way of *Gloire de Nancy*, but rather darker. Round each group of double kinds was a ring of a Noddy Pelargonium; two of these rings were formed of *Pride of Osberton*, having large trusses of brilliant deep orange-scarlet flowers with broad petals; the other, *Morning Star*, much in the way of *Lady Constance Grosvenor*, but broader in the petals, both new kinds, and so promising that Mr Gibson intends giving them another season's trial. The groundwork inside and outside the line of *Veronica incurva* was filled with *Alternanthera paronychioides*, so as to form a band. This series of diamond and circular-shaped beds affords a good opportunity for testing new varieties of bedding Pelargoniums. At the back of this bed was a raised bed of Cannas. The buff-flowering variety of *C. picturata* formed a background: in front of this was *C. expansa*—both dark-foliaged and dwarf-growing, and edged with a dwarf-growing plant. By this was another raised circular bed in the turf, in the centre of which was a cross formed of *Cordyline indivisa*, with a plant of *Dracæna terminalis* at each of the points. The *Cordyline* had somewhat narrow leaves, but Mr Gibson states they always come broader when the plant is more grown. The angles of the cross were filled with the silvery *Centaurea gymnocarpa*, all encircled by a single line of *Alternanthera paronychioides*; next this a circle of *Sempervivum montanum*, with an outer edging of *Saxifraga cristata*; this bed also was very fine and effective. Another bed had a broad band of *Lantana fabiola* in the centre, next this was *Plumbago capensis*, next this a double line of *Sempervivum Californicum* as an edging. Mr Gibson thinks that if *Plumbago capensis* and *Lantana ne plus ultra* could be grown mingled together, the effect would be very fine indeed. Next came a splendid bed of *Canna rubro-caulis*, edged with *Centaurea ragusina*. This combination was very fine indeed, the dark leaves of the Canna contrasting so well with the silvery foliage of the *Centaurea*. Equally effective was a large and long oval-shaped bed of *Canna Bihorelli*, with deep dark foliage, and blooming profusely, throwing spikes of orange-maroon flowers as showy as a *Gladiolus*—a fine species for conservatory decoration in the summer. This bed was carpeted with Sweet Alyssum, then a

line of *Pelargonium Golden Fleece*, with an outer edging formed of a double row of *Sempervivum Californicum*. Then came a circular bed, the centre filled with the old form of *Erythrina crista-galli*, edged with *E. rubella*, with rich dark-crimson flowers, very fine; round this a good dark *Heliotrope*, and edged with *Molinia coerulea variegata*, a silvery variegated grass. Near this were some plants of the double-blossomed Pomegranate, but not so effective as the single variety; and a bed, the centre formed of *Hibiscus sinensis rosea splendida*, also plunged in pots, flowers very large and showy, but requiring a hot dry summer to drive it into bloom; and a carpet of a dwarf double-white *Balsam*, edged with *Bull's Serena*, a very pretty pink-flowering Zonal *Pelargonium*, with large and showy trusses, very fine; and an outer edging of *Golden-Chain Pelargonium*. Then came a splendid foliaged bed; the centre had some huge Indian-rubber plants; round this *Aralia papyrifera*, and a carpet of *Aralia Sieboldi*, and *Canna expansa*, a very dwarf-growing dark-foliaged species—these to hide the nakedness of the stems of the *Ficus*; round these was an edging of *Hedera multi-maculata*, a good variegated Ivy, the leaves blotched and striped with silver. This bed will be clothed in foliage during winter, as the *Aralia* will gradually fill out and occupy the space of the bed. Near this were two magnificent beds of *Cannas*; one was a huge long oval-shaped bed of *C. Peruviana*, edged with *C. expansa*, and a line of a dwarf silver-striped Ivy beneath. *C. Peruviana* had soft orange-red flowers, and had occupied this place for four years past without removal. It was a grand lofty mass, and will stand for five years, when the bed becomes exhausted. The *Canna* throws such a mass of roots that the bed requires well mulching with strong manure every two years, and each year some 3 inches of good manure is placed on the bed; and yet, with this liberal treatment, five years is as long as a bed will last in good condition. The other bed had a centre of *C. annæi*, the tallest-growing of all. From the ground to the apex of the flower-stalks some of the plants were fully 10 feet in height, and one reached 11 feet; this produces deep buff flowers, and was edged with *C. nigricans*, a capital dark-foliaged kind, and thought to be an improvement on *C. expansa*; round this, *Golden-Chain Pelargonium* in front, *Alternanthera paronychioides*, and an edging of *Veronica incana*.

But further details—and there are yet some very interesting features to be described—must be reserved for our next number.



NEW PLANTS OF THE PAST MONTH.

THIS is the season for new *Chrysanthemums*, and Messrs Salter & Son of Hammersmith have a fine lot of new flowers, which will be noticed very shortly. It may be recorded here that one of their new Japanese varieties, named Sultan, received a first-class certificate. The flowers are formed of clusters of broad ribbon-like bright lilac-rose florets, and it is one of those fine flowers that are so well adapted for conservatory decoration at this season of the year.

In a most interesting group of Orchids and other flowering-plants, exhibited by Messrs Veitch & Sons at the meeting of the Royal Horticultural Society on November 16, was an example of *Oncidium Eux-*

anthinum, a new Brazilian species imported by the exhibitors. It has the habit of *O. bifolium*, and was thought by some to be inferior to it. It was ultimately awarded a first-class certificate. In this group were such fine things as the brilliant yellow-flowering *Oncidium Rogersi*, really more striking in hue than the larger and nobler form of *Oncidium macranthum hastiferum*; *Dendrobium bigibbum*, a rare and very beautiful species; and some small plants of *Aphelandra aurantiaca Roezlii*, with flowers of a showy deep scarlet hue. Mr Bull also sent a group of plants, among which was a capital example of *Litobrochia undulata*, an elegant and robust-habited Fern, that obtained a second-class certificate some time since, but on this occasion was so much improved in appearance as to warrant a first-class certificate. Mr Linden also sent a group of plants from Brussels. Among them was *Maxillaria splendens*, a white species, said by Mr Bateman to have flowered in this instance for the first time in Europe. It was in the way of *M. venusta*, but with stouter top petals, which, together with the sepals, were white, the lip bright orange, with the edges tipped with rose. In this group was a flowering-plant of *Oncidium macranthum hastiferum*, but not so finely developed as the form of it in the possession of Lord Londesborough. A first-class certificate was awarded to Mr Green, gardener to W. Wilson Saunders, Esq., for *Siphocampylus Humboldtiana*, a stove-plant allied to the *Lobelia* that is said to be always in bloom, but must be kept in a damp atmosphere or it will lose its leaves. The flowers were of a deep blood-crimson hue. Mr B. S. Williams also contributed a good group of plants. Among them was *Masdevallia tovarensis*, a pure white form, thought to be identical with *M. candida*, recently exhibited by Messrs Veitch & Sons. A first-class certificate was awarded to it conditionally with its proving to be distinct from *M. candida*. In Mr Williams's group was also a good specimen of the fine *Cymbidium Mastersi superbum*. An example of *Sarcanthus bigibbum* was also exhibited by Mr Marshall, gardener to W. Marshall, Esq., and awarded a first-class certificate. It has lemon-coloured petals, and a white and orange lip.

Messrs Downie, Laird, & Laing contributed a group of seedling bedding *Pelargoniums* of unusually fine promise: two especially stood out with marked distinctness from the rest—namely, *George Peabody*, with large and striking vivid orange-crimson flowers of the finest form and substance, a novel hue of colour, notwithstanding the number of flowers classed as partaking of crimson hues; and *Pink Queen*, deep rosy pink, very fine and distinct. Possibly the lateness of the season might have had something to do with intensifying the colours of these fine flowers; it was therefore requested that they be sent again next season.

From the Society's Gardens at Chiswick came large flowering branches of *Dahlia Imperialis*, bloomed in one of the houses at Chiswick by Mr Barron. It was awarded a first-class certificate as a decorative plant for the conservatory. R. D.

PROTECTION FOR WALL FRUIT-TREES.

FIG. 1 represents a 12-foot wall, the canvas drawn a little way up. *a a a a* are $\frac{3}{8}$ -inch wrought-iron rods, which are hooked into an eye in an iron bar projecting from the wall at the top, and fixed at the bottom by means of a screw-nail through its flattened end in a 3-inch-square

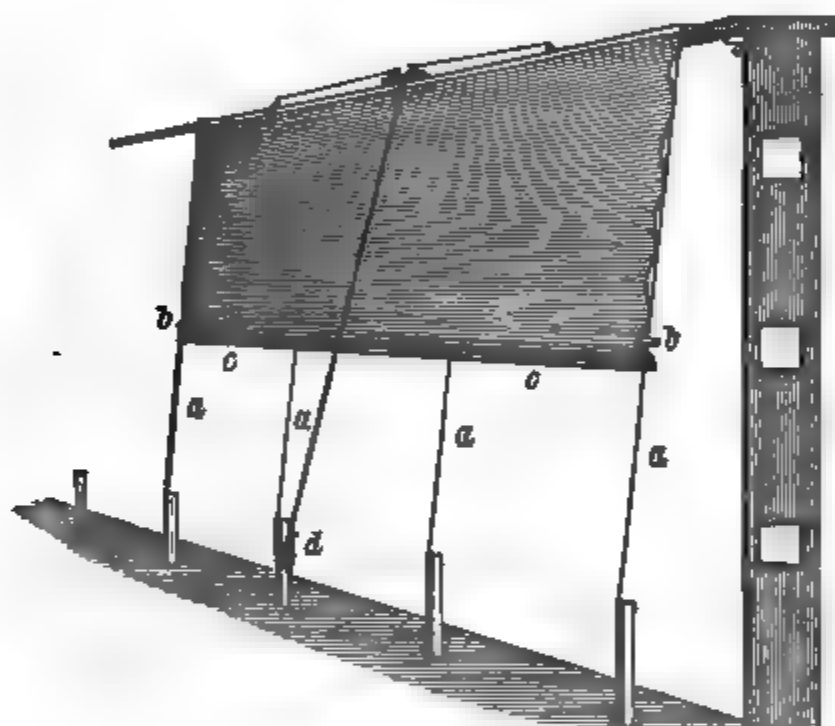


FIG. 1.

post. *b b* is a narrow piece of 1-inch deal attached by iron staples to the rods, so that it easily moves up or down. To this rail, at *c c* inside the canvas, are attached the ends of the ropes, which pass over four pulleys, by which means the rail is quite easily drawn to the top, and with it the canvas—both drawn up together like a curtain, being strung upon the rods by rings about 18 inches apart. When drawn up, the cords are twisted round hooks on the side of one of the posts (*d*) to keep it in its place at the top, and prevent the ropes getting soiled. When let down, a loop thrown over each end of the bottom rail secures the canvas from flapping with the wind. The sheet of canvas represented in the fig. is 20 feet long by 9 feet wide. It was found that 20 feet was as long as could be conveniently worked. After binding the

whole piece round with cotton tape, four pieces of the same, with rings attached, are laid across, and stitched to the canvas, so as to run exactly



FIG. 2.

with the rods *a a a a* in fig. 1. Fig. 2 is intended to show how the tape is run *through* the rings, the rings being arranged at equal dis-

tances one from the other. The two outside pulleys are simply screwed upon the tops of the boards in front of the coping, with holes for the ropes to pass down inside; but the two centre ones are on a separate piece of plank, and project slightly beyond the other board, it being necessary to have the ropes outside. At the point where two pieces of canvas meet, instead of the usual post for each rod, one post 6 inches broad is put in, and the rods are placed so that there may be room for the ends of the rails to pass each other when working them (fig. 3).



FIG. 3.

Here I have given you, in as few words as possible, the mode of protection tried here for the first time last spring. I cannot, however, place it before your readers without acknowledging that it is not faultless. It will be readily perceived by some that the canvas, thus drawn up in a bundle of loose folds at the top, will shade at least 18 inches of the top of the wall, and that its folds will be apt to be

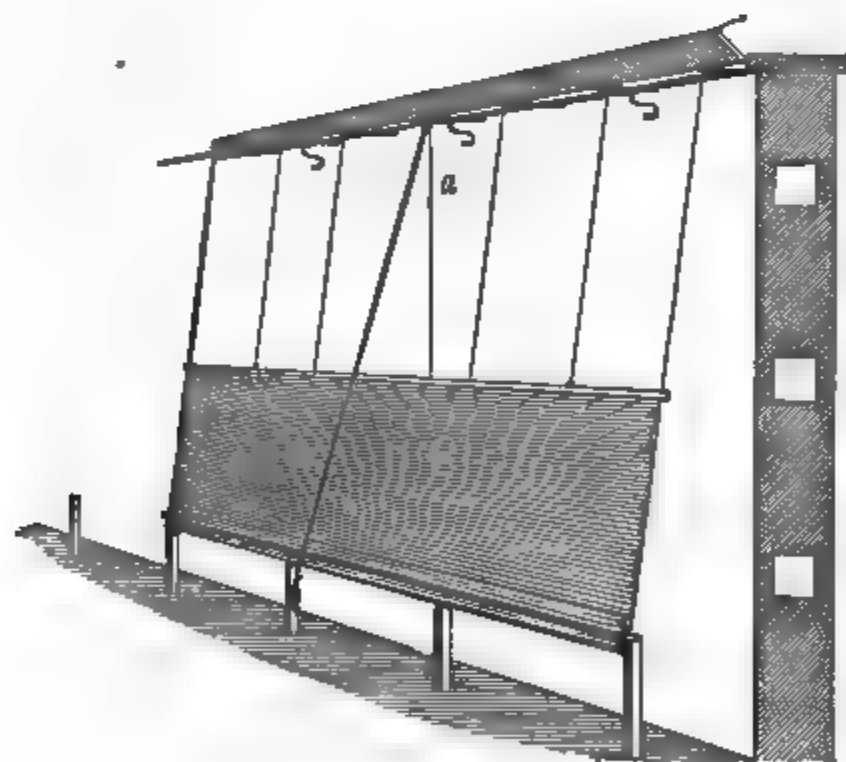


FIG. 4.

dashed against the branches by the wind, and be in danger of knocking off the buds. I think it would be an improvement, when some shade

from bright sunshine is necessary, if the board at the top were removed, to cause a circulation of air between the canvas and the wall. I have sketched fig. 4 to show how these evils may be remedied. Instead of the canvas falling from the top, according to the plan, its proper resting-place should be at the bottom. Instead of nailing the canvas to the front of the coping-board, it may be nailed to a similar rail as *b b*, fig. 1, and the ropes attached to it instead of to the lower one. By having the canvas at bottom, it is removed farther from the wall; and owing to the direction of the sun's rays, very little of the bottom of the wall will be shaded, and, besides, the folds of the canvas will still be at liberty to play with the breeze, to dry it when let down wet (one of its great advantages). To set the board at liberty, I think it would not be a very difficult matter to have the pulleys supported on projecting iron plates (fig. 5), with good strong supports under them. The boards might be set on hinges at the front of the coping, and worked up and down by a small pulley fixed into the stone coping, with a

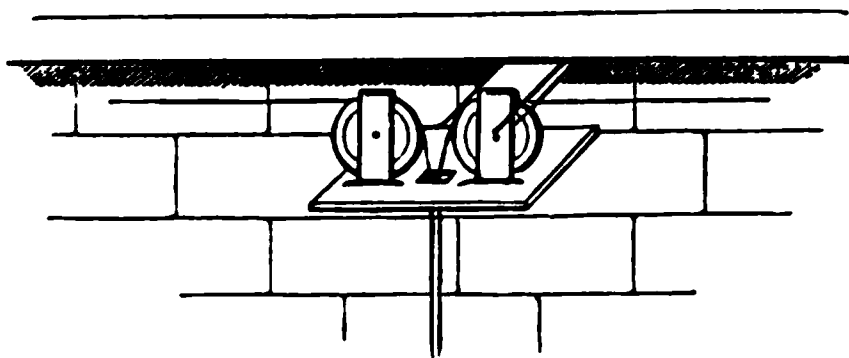


FIG. 5.

hole for the rope to pass down close by the wall. I have tried to show at fig. 5 that the pulleys now in use are closed in over the top, so that the ropes cannot get out of their place if left hanging loose. I have no hesitation in saying that *frigi domo* is the best material for this purpose.

R. I., G. P.



TRAVELLING NOTES ON GARDENS IN THE MIDLAND COUNTIES.

(Continued from page 513 of 1869.)

VIEWED as a whole, the scenery around Eastnor Castle possesses a greater variety of aspect than is usually to be met with in places of a similar character. Nature has done much here, and art has stepped in to give the finishing stroke. The want of space does not permit me to individualise. I can only notice cursorily a few of the leading features, and these of the simplest kind. We have here a constant succession of hills of varying altitudes, in different directions, and several miles in extent; some in the distance appearing to overlap each other—while, again, some are standing out as distinct objects, as if thrown off during a subterranean convulsion.

So great an irregularity of surface produces a rapid succession of parts, and although the transition is quick, often violent, the contour is graceful, so that

one may look and look again without fatiguing the eye or oppressing the mind. But after what has been said, we cannot evade the fact, that all that is grand in the composition is not due solely to the physical features of the ground; much has been done by judiciously arranging the plantations, whose boundaries follow the lines designed by nature, and, never formal, is always easy.

Unfortunately the kitchen-garden, although situated 800 feet above the sea-level, is comparatively low, a circumstance which Mr Coleman exceedingly regrets, as he says, and with truth, that the spring frosts settle in such a position with more force, and are of longer duration, than on higher ground. Hence early vegetables and fruit-tree blossoms are destroyed, while in gardens of a greater altitude the effect is hardly felt. I observed that in most cases the garden walls are not high enough to give the trees sufficient extension. To economise in this direction is certainly a mistake, and should be studiously avoided, as under a cramping system the knife must be freely used to confine the branches within their allotted space, which rather increases than weakens vitality, and so year by year produces an endless and unnecessary supply of wood.

The collection of hardy fruit is extensive, containing a large number of the best varieties, and Mr Coleman takes a deep interest in pomological pursuits. However enthusiastic he may be in this direction, the situation possesses unconquerable drawbacks, over which the most active and intelligent mind has little or no control. Added to the objections I have slightly noticed, the garden soil is by no means well adapted either for fruit or vegetable culture. The surface, although friable and kindly looking, is by no means congenial, owing to a continued excess of water. The substratum is a stiff marl, or rather it may be called a clay bottom, which could be greatly improved by draining, but there is not a sufficient height to produce an active discharge. The glass erections are numerous, and for the most part well adapted to the purpose for which they are intended; and especial mention should be made of two peach-houses, each 82 feet long and about the usual width. Mr Coleman forms his tree-borders of calcareous loam, which, he says, is the real cultural secret, and to his opinion I give an unqualified assent. Next I would notice a span-roofed vinery 72 feet long by 20 feet wide, exclusively occupied with a Black Hamburg Vine. This is not the place to discuss the merits or demerits of what are now known as the extended or restricted systems of Vine-culture. Were I to state my own convictions, I would decidedly advocate moderate restriction—that is, I would only permit two leading shoots—not that I believe such a method is of itself calculated to produce first-class Grapes, but, other things being equal, I feel satisfied that a greater weight of fruit, larger bunches and berries, can be produced, than by allowing a Vine to ramble unrestricted.

The Vine under consideration has been planted at least fifty years, and at this age does not show the least sign of decrepitude—is as vigorous as many, and much more so than some a few years old. “There can be no doubt,” observes Mr Coleman, “that the roots have passed beyond the limits of the garden, and are luxuriating in some agreeable place,” as the surrounding soil is by no means qualified to support such vigorous growth.

The Vine was introduced at the end of the house, and conducted along the apex of the roof. From this principal and secondary shoots are trained downwards on each side. The bunches were of a medium size, the berries large, and the colour perfect. There are, as among other Grapes, such as the White Muscat, several varieties, and the Hamburg offers no exception. This is said to be a superior kind of the latter; but from what I could see of its character, I strongly suspect it to be the Frankenthal, by its rounded oblate berries.

I now pass on to notice as succinctly as possible what may be called a house of general accommodation, of large dimensions, which is used during summer as a vinery, where heavy crops of Grapes are annually produced of excellent quality, and as a repository during winter for plants for out-of-door decoration. Space does not admit of an individual notice, so I shall only mention a few of the most prominent objects. We have first to deal with a pair of magnificent *Dicksonia Antarctica*, straight stems over 12 feet high and 26 inches in circumference at the base, carrying a magnificent head of healthy fronds. Beautiful as this Fern is in all its stages of growth, it must be seen as a large plant to be thoroughly appreciated. It was purchased, Mr Coleman told me, from Messrs James Veitch & Sons; said to be the largest specimens that these gentlemen have ever introduced. There are also two splendid plants of *Seaforthia elegans* in the best possible condition, and both were grand objects.

The other inmates consisted chiefly of *Araucaria excelsa* and *A. Brasiliana*, *Cephalotaxus drupacea*, *Thuja Doniana*, *Dammara Brownii*, *Dacrydium cupressinum*, *Santolina chamæ-cyparissus*, *Callitris quadrivalvis*, *Chamærops excelsa*, *Clethra arborea*, *Aralia Sieboldi*, very large specimens of variegated Aloes, pyramidal Ivies and standard Fuchsias. I had almost forgotten to mention that this house is planted exclusively with the Black Hamburg Vine, and produces yearly 3 cwt. of superior Grapes.

Passing over very many houses possessing but little interest, as the fruit had been consumed, I reached the Pine-stoves, which contain a selected collection of the best varieties suitable for summer and winter use, such as the Smooth-leaved Cayenne, Black Jamaica, Charlotte Rothschild, different varieties of the Queen, and a few plants of Black Prince. Mr Coleman says the latter kind makes a fine appearance on the dinner or exhibition tables, owing to its large size, but he does not approve much of the quality.

No great stretch of memory is required to remember the time when Pine-cultivators set it down as an incontrovertible fact, that very large pots (often 18 inches), and a corresponding size of plants, were the only requisites necessary to produce large fruit. The maturation of the vegetable juices was but little thought of, or perhaps little understood. But happily such a system has now few advocates; a greater knowledge of essential requirements is now abroad. Our best cultivators have discovered that better fruit can be produced from pots not exceeding 12 inches in diameter. Whether Mr Coleman has followed the teaching of others, or has intuitively taught himself, I know not, but this much I can say conscientiously, that his plants were excellent specimens of cultivation.

Omitting much of interest, I now moved on to the Pinetum and pleasure-grounds, which are, after all, the grand features of the place, especially to those who are admirers of Coniferæ and hardy trees and shrubs.

I had intended to compress within the limits of this paper the substance of my notes, but find that enough matter remains to form the subject of another communication.

TORTWORTH COURT.

ALEXANDER CRAMB.



LIVERPOOL CHRYSANTHEMUM SHOW.

CHRYSANTHEMUM Exhibitions are by no means uncommon nowadays, for, in addition to the one now being noticed, a large one is held at Bristol, and then in the London district there is the old Stoke-Newington Society—an association to which the present position of the Chrysanthemum owes much—besides several others of less reputation, though all doing good service in the cause of floriculture; and there are in addition the admirable exhibitions made by Messrs Salter & Son, at Hammersmith, and Mr A. Forsyth, at Stoke-Newington (one at the west of London, and the other at the north-east side), growers whose names are household words with the exhibitors of Chrysanthemums all over the United Kingdom. For the rich quality and high development of the flowers, Stoke-Newington stands pre-eminent; and it is generally admitted that on the occasion of the annual exhibition in November last, the Chrysanthemum blooms were never seen finer. For extent, in all probability, Liverpool leads the way; and in regard to that great and essential result which does not always crown the efforts of the best and most zealous committees—success—Liverpool wears the conqueror's crown. An autumn exhibition at Liverpool means the magnificent hall of St George's, in Lime Street, filled with plants and fruit, and the hall thronged with company the whole day through, and resulting in a large profit to the Committee. St George's Hall at eight o'clock in the evening, when the full glare of the gaslight brings out distinct and clear the smallest object, and a crowd so dense that sometimes any movement in the huge mass of humanity gathered between the tables and in the galleries is scarcely perceptible—and delicious music adds its pure enjoyment to the scene,—that is a sight well worth looking on. Ah! it is a poor spirit that can look upon a scene like that unmoved, whatever may be the ruling motives operating to bring such a company together.

Touching the Liverpool Show, let us hope that the day is not far distant when we shall see the last of such hideously-formal and unnaturally-trained plants of Chrysanthemums as those staged at the last show. There is a layer of green leaves almost as smooth as a lawn, so closely are the branches tied down to flat wire trellises, overlaid by a layer of flowers, giving a regular and unbroken surface, and looking like floral card-tables. What twisting and torturing processes must be adopted to accomplish this! what manœuvring must be required, and all to secure something as unlike nature as can possibly be! All that natural elegance of the plant is suppressed, as if it were a thing foreign to it, and not one to be developed with all the skill of the grower. In our next number we will endeavour to show, by a reference to what has been most worthily done during the season by a most successful grower, that Chrysanthemums can be cultivated in the form of specimen plants with only the aid of a few upright sticks to support the plant in a natural and easy manner. The specimen plants were staged all round the sides of St George's Hall on two broad shelves, one above the other, nicely covered with green baize, and in size they averaged from a diameter of 2 feet to huge examples fully 6 and 7 feet in diameter. There were to be seen none of the magnificent incurved flowers similar to those at Mr Salter's, at Hammersmith; the sorts used are invariably the reflexed flowers, that do not fold their petals over towards the centre in the form of a half-ball. Cut blooms were not so fine as they are always seen at the Stoke-Newington Show, but we would be led to suppose that more attention is paid to the cultivation of plants. The best eighteen, shown by Mr R. Foster, gardener to S. H. Thompson, Esq., consisted of Lady Slade, Jardin des Plantes, Fingal, Empress of India, Bronze Jardin des Plantes,

Prince Alfred, Guernsey Nuggett, Isabella Bott, a charming hue of delicate pink, Rev. J. Dix, Princess of Wales, Princess Beatrice, Dr Brock, Mrs Haliburton, Alarm, General Bainbrigge, Queen of Whites, Lady Talfourd, and Virgin Queen. The best twelve also came from Mr Foster ; and the best six from Mr M'Hardy, gardener to G. W. Bateson, Esq., who had Nil Desperandum, Jardin des Plantes, Eve, Lady Harding, Sir Stafford Carey, and Cherub.

Now what was particularly wanted at this Exhibition was fine big ornamental and variegated foliaged plants—Tree-Ferns, &c.—to relieve the sameness that prevailed, and the dwarfed appearance of the small plants. Along the body of the Hall were placed three long tables. If the centre table had had a bank of large plants nicely arranged, instead of the fruit, it would have been a great improvement in the appearance of the Show. Surely, if prizes were offered for them, there are plenty of big plants that could be produced in competition for such prizes. Some good specimens of *Salvia splendens*, *Plumbago rosea*, and suchlike, would have done admirable service on this occasion, especially the former by night. What is really required is, that some of the Chrysanthemum classes be struck out, and prizes offered for groups of plants, as just suggested. The Committee has no lack of funds, and cannot proffer the consideration of poverty. Poinsettias were nicely done, and by night the blood-crimson florets (in every case grandly coloured) were particularly vivid. The best specimens were dwarf, the stems being twisted round some short stakes, and each had three bunches of coloured leaf-flowers. There were plenty of standard and pyramidal-trained plants of Mignonette, somewhat weakly-looking, as might be expected at this season of the year, but promising to be very good by the spring show. Ornamental-fruited plants—a capital idea—were represented by the excellent and useful forms of Weatherill's Hybrid Solanums, *Skimmia Japonica*, and *Rivinia humilis*, very good as a beginning, but surely capable of being extended. Primulas were pretty, though mainly confined to the pyramid style of growth, but the best plants were of the ordinary type ; and pans of the early single Roman Hyacinth, twelve bulbs in each, were nicely done, and largely shown.

The show of fruit was very good, particularly Apples and Pears ; and good and well-known cultivators like Mr Hill, of Keele Hall Gardens, thought the show of the latter the finest they had ever seen. A group of some eighteen Pine-apples, shown in two classes, contained a splendid Charlotte Rothschild from Mr Ward of Bishop-Stortford, weighing 9½ lb. Of Grapes, Black Alicante, Trebbiano, and Lady Downes were very well shown ; and Mr Tyerman, of the Botanic Gardens, exhibited a basket of Mrs Pince, sent from Cornwall, which had been grown in a vinery without heat, to show that it will colour as readily as the Black Hamburg under the same circumstances.

It was estimated that some 600 dishes of fruit were staged on this occasion, Pears and Apples largely preponderating. The tug of war (and it *was* a sharp tug, and gave the judges something to do) was in the class for eight dishes of dessert Pears, and fifteen competitors entered the lists. The 1st prize went to Mr Brown, gardener to Colonel Biddulph, Chirk Castle, who had splendid examples of Crassane, Urbaniste, Baronne de Mello, Marie Louise, Beurre Diel, Napoleon, Beurré d'Anjou, and Beurré d'Aremberg. Mr Brown staged another collection in this class which was awarded an extra prize. The sorts were Nouveau Porteau, Napoleon, Beurré Diel, Marie Louise, Glout Morceau, Beurré Rance, Urbaniste, and Beurré d'Anjou. Mr Auchterlonie, gardener to Mrs Harvey, was 2d with fine fruits of Baronne de Mello, Napoleon, Glout Morceau, Hacon's Incomparable, Beurré Clairgeau, Beurré Diel, Brown Beurré, and Marie Louise. Comte de Flandres, Easter Beurré, and Prince Albert were the only vari-

eties in the 3d prize collection differing from the foregoing. Three extra prizes were awarded in this class. This will give some idea of the closeness of the competition. The best four dishes of Pears comprised Beurré Diel, Marie Louise, Easter Beurré, and Doyenne du Comice. They came from Mr Lowndes, gardener to S. S. Parker, Esq., and were a fine lot; in this class there were fourteen competitors. In the class for a single dish of the best-flavoured Pear, there were twenty-seven dishes staged. The best and second best were Doyenne du Comice, the third Marie Louise. Thompson's Pear was also of fine flavour. The best six dishes of dessert Apples, and there were thirteen collections, consisted of Bess Pool, Ribston Pippin, Cockle Pippin, King of Pippins, Winter Strawberry, and Blenheim Orange. These were also shown by Mr Brown. The second best group had Ribston Pippin, Court Penduplat, Orange Pearmain, Newtown Pippin, Blenheim Orange, and Melon Apple. Mr Orr, gardener to H. Peirce, Esq., who was second with the six dishes, was placed first with three dishes, having Ribston, Newtown, and King of Pippins. Ribston Pippin was placed first and third in the class for the best dish of dessert Apples, and Blenheim Orange second. Culinary Apples were really grand. There were ten collections of eight dishes. The best lot, as well as the best four dishes, came from Mr Manderson, gardener to H. R. H. Jones, Esq., who had in the first instance St Saviour, Alfriston, King Apple, London Pippin, Small's Admirable, Mere de Menage, Winter Hawthornden, and Bedfordshire Foundling. The four dishes consisted of Mere de Menage, Alfriston, Winter Hawthornden, and King. The best single dish came from Mr Miles, gardener to Lord Carrington, Wycombe Abbey—splendid examples of Mere de Menage. Mr Brown was 2d with Alfriston, and Mr Manderson 3d with King.

The November meeting of the Royal Horticultural Society was the means of bringing together a small but interesting exhibition of Chrysanthemums. It was also the occasion of the *début* of a new exhibitor, Mr J. James, gardener to W. F. Watson, Esq., Isleworth, near London, who had some plants most superbly flowered, and grown on the old-fashioned upright method, which, though rather tall, were furnished with fine healthy foliage. The class was for four large-flowering Chrysanthemums, Mr James being placed first with Empress of India, Jardin des Plantes, Mrs G. Rundle, and Lady Talfourd, the flowers of great size, and beautifully incurved. The second lot were nicely-grown plants, trained in a somewhat globular fashion, and had plenty of small flowers. The sorts were Prince of Wales, Lady Hardinge, Alma, and Golden Christine. The third lot were of a like character, but not quite so good. Mr Forsyth of Stoke-Newington—the Salter of the northern district of London—was first with four good plants of Pom-pone Chrysanthemums, the sorts being Andromeda, Golden Aurore, Bob, and Sainte Thais. The next lot, from Mr Rowe, were all anemone-flowered varieties, the plants large and well done, but of a great sameness of character—viz., Miss Nightingale, Antonius, Marguerite de Wildemar, and Mon. Astie. There were also classes for twelve and six cut blooms. The best twelve came from Mr Forsyth, who had nicely-finished examples of Oliver Cromwell, Golden Beverley, Princess Beatrice, Princess Teck, General Slade, Mrs Heale, Prince of Wales, Lady Hardinge, Rev. Joshua Dix, Princess of Wales, John Salter, Isabella Bott. Mr Rowe had the best lot of six cut blooms, consisting of Empress of India, a very large white variety, Prince Alfred, Lady Hardinge, Queen of England, John Salter, and Jardin des Plantes. There was a capital competition, and, generally speaking, the flowers were pretty good. In addition, Mr Salter contributed a group of new varieties that will be more particularly referred to in a future number.

THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

THE annual meeting of this Society was held in the Music Hall, George Street, Edinburgh, on the 2d of last month, when there was a large attendance of members. Mr Thomson, Dalkeith Park, in the chair. Mr Methven, the Treasurer, read over the financial report for the year, which showed that, notwithstanding the heavy expenditure caused by the Great International Exhibition, the Society had added to its reserve fund something like £200. The accounts having been previously audited by Mr Alexander, of the firm of Dickson & Co., were passed unanimously; and the Treasurer then resigned his position in connection with the Society. The name of another gentleman was mentioned as a suitable successor to Mr Methven, but as he was unknown to the majority of the members, it was agreed to adjourn the meeting for a week, to meet in the same place. At this meeting, Daniel Smith, Esq., W.S., in the chair, Patrick Neil Fraser, Esq., Canonmills Lodge, was proposed and elected to the office of treasurer by acclamation, as a gentleman well known for his love of horticulture, and held in high esteem by all who know him.

A vote of thanks to the chairman and the other office-bearers of the Society terminated the business of the meeting.



TEMPLE GARDENS.

IN accordance with established custom, the gates of these gardens are once more thrown open to the public, and are daily thronged with thousands of visitors. The display provided by Mr Broome in the Inner Temple far exceeds that of former years, both in the open borders and under cover. The long border, now temporarily sheltered with mats and glass-lights, is a complete mass of flowers of extra fine quality; and the splendid beds of pomponne varieties by the side of the terrace-walk were, when we saw them, bristling with buds, and by this time are sheeted with bloom. The three Leicester vases by the side of the walk are also filled with pomponne varieties, and have a charming appearance.

The display in the gardens of the Middle Temple is also above the average with respect to the health of the plants and the quality of the flowers, but scarcely so extensive as in former years. The long border of large-flowering kinds, and the two grand beds of pompones at the bottom of the garden, are especially deserving attention; but we are bound to refrain from giving a list of the best varieties for want of space.—*Gardeners' Magazine.*



REVIEWS.

THE PARKS, OPEN SPACES, AND THOROUGHFARES OF LONDON. By Alexander M'Kenzie, landscape-gardener. London: Waterlow & Sons, London Wall.

IN a very readable pamphlet of twenty-two pages Mr M'Kenzie discusses this question. In common with Mr William Robinson and others, he deems the subject to be of great importance at the present moment, and he brings to the

discussion of the question undoubted originality, keen intelligence, and a practical observation. He is very severe on some of the attempts at ornamental gardening in the London parks, and says, on p. 6 : "Of the attempts at landscape and ornamental gardening lately made in Hyde Park it is impossible to speak in language too severe. The extravagant system of attempting to convert our parks into sub-tropical gardens, with luxuriant parterres of flowers, cannot be too strongly condemned. Neither the climate nor the soil are such as to do justice to the former, and a display of choice spring bulbs, succeeded by tender plants and expensive gardening, is a system which even a wealthy nobleman would not for a moment tolerate in his own park. In all public parks there should be some spots dedicated to flora ; but, whilst these should be excellently kept, it is only necessary that they should be of moderate extent. At present upwards of 100,000 plants are annually bedded out in Hyde Park. The most extraordinary attempt at improvement, so called, in Hyde Park, is that which was carried out last year on either side of Rotten Row, where money enough has been spent to have insured infinitely better results. To the man of taste few things can be more annoying, but for the amusement they excite, than the elaborate efforts of the suburban labourer or mechanic, who, naturally 'fond of gardening,' but utterly untaught and inexperienced, seeks to convert the few yards of ground adjoining his cottage into an innate and fantastic jumble of brick rock-work, pebbles, oyster-shells, and bits of glass, with miniature gravel-walks, and all kinds of tender and hardy plants and flowers mixed together without the slightest perception of their natural habits and requirements."

In this part of his pamphlet Mr M'Kenzie is emphatically destructive, and scarcely one of the features of "modern gardening" lately introduced into Hyde Park and elsewhere, finds favour in his eyes. He then goes on to make some capital suggestions as to the ornamentation and beautifying of the common spaces round London, which he would zealously preserve for public use ; and there he would also provide opportunities for public recreations, such as gymnasiums, water, cricket-grounds, &c. He would also abolish the monopoly that now affects the gardens in the public squares in London, and throw them open to the poorer classes ; and utilise the disused burial-grounds of the metropolis as places of public resort and recreation. He also suggests new thoroughfares that might be opened up, and advocates the embellishment of some of the great lines of communication with the suburbs by planting lines of trees on either side, with seats beneath them. The office of Chief Commissioner of Public Works should be no longer a political office, subject to changes of Government, but a permanent appointment—an opinion with which we think few horticulturists, at least, would be disposed to disagree.

Mr M'Kenzie advances his several positions clearly, boldly, and with much force, and his pamphlet will amply repay perusal.

THE GARDENER'S YEAR-BOOK, ALMANAC, AND DIRECTORY FOR 1870. By Robert Hogg, LL.D. Journal of Horticulture Office, 171 Fleet Street, London.

This very useful gardening manual has reached the eleventh year of publication, and still holds on its way as popular as ever. A closely-printed almanac of some 160 pages is surely cheap at a shilling for the fund of information it supplies to horticulturists alone, inclusive of carefully-prepared lists of new Fruits, Plants, and Flowers of the year ; but, in addition, there is so much matter of general importance that its value is considerably enhanced. We don't compare it with other almanacs of a similar character ; we simply speak of it on its own merits, and commend it as it deserves to be commended.

The Proprietors of the 'Journal of Horticulture' offer the following prize for competition at the Show of the Royal Horticultural Society at Oxford in July next—viz., Dessert of Fruits, unlimited as to quantity and kind, fit for the table, and combining excellence of quality with taste in arrangement, £10. Open to amateurs and gentlemen's gardeners only.

At the meeting of the Royal Horticultural Society, to be held on Tuesday the 21st December, the following prizes are offered—viz., By the Rev. George Kemp, F.R.H.S., and Member of Fruit Committee, for the best winter dessert of Apples and Pears, 3 dishes of each, £3 and £2.

We are informed that the prize of £5, 5s., offered by Lieut.-Colonel Scott, R.E., Secretary, Royal Horticultural Society, for an Essay on the "Principles of Floral Criticism," will be awarded on Wednesday, May 4, 1870, and not January 19, as previously announced.



NOTES AND QUERIES.

MUSCAT OF ALEXANDRIA GRAPES.—At the meeting of the Fruit Committee of the Royal Horticultural Society, held in November, Messrs H. Lane & Son, Berkhamstead, exhibited some splendid examples of Muscat of Alexandria Grapes, which were ripe in June last, and were still plump in appearance, of fine size, and fresh-looking. The flavour was exquisite, and the Committee awarded Messrs Lane & Son a Special Certificate for their production.

VIOLA CORNUTA, VAR. PERFECTION.—An attempt has been made to identify this fine new Viola, recently awarded a First-Class Certificate at one of the meetings of the Royal Horticultural Society, with what was known as "Beaton's Good Gracious Pansy," or the old but worthless Double Purple variety. This was lost sight of for some time, but in 1862 was sent out by Messrs Carter & Co. under the name of Princess Alexandra, and was tried for bedding purposes, and universally condemned. It had a weedy habit and uncouth unattractive double flowers, altogether destitute of beauty. It will be found figured in the 'Florist and Pomologist' for 1862.

BEACONSFIELD KIDNEY POTATO.—This is a fine new variety, and was recently exhibited by Mr Turner, Slough, and received from the Royal Horticultural Society a First-Class Certificate. It has a smooth-skinned tuber of handsome shape, is said to be a medium early kind, and very prolific; and when cooked and tasted, the quality was found to be first-rate.

PITMASTON DUCHESSE D'ANGOULEME PEAR.—Some very fine examples of this Pear have been exhibited by Mr Fowle, gardener to Sir Henry Mildmay, Bart., Dogmersfield Park, Hants, which were gathered from a tree planted against a west wall in February last. The fruit has a somewhat lengthened tapering appearance, the skin of a deep yellow colour, and somewhat smooth. It was favourably mentioned.

HYACINTHS IN GLASSES (A Subscriber).—Take the bulbs from the glasses, thoroughly cleanse both the roots and the interior of the glasses with pure water, and then place a few small pieces of charcoal in each glass, and fill them with fresh soft water, and replace the bulbs. Examine them every other day to ascertain if the water has become tainted, and if so, cleanse and change again—if not so, let well alone.

ARCADES AMBO (Ignoramus).—A thoroughly friendly and good-natured saying, well meant and as heartily appreciated. Freely translated, it signifies “both Arcadians,” and is quoted from Virgil. The Arcadians were all peculiarly clever in singing, hence the saying applies primarily to singers, but it is often transferred to rival performers in any art or business, and though thought generally to carry with it a touch of sarcasm, yet is not so intended in the paragraph from which you quote.

BEE-KEEPING (Inquirer).—Your suggestions shall receive careful consideration. We have just received an interesting paper entitled “A Half-Hour on Bees,” prepared for, and read by invitation at one of the meetings of, the Hanwell (Middlesex) “Penny Readings,” by “A Hanwell Bee-Master.” We hope to give it in our next issue.

DISEASED PELARGONIUM-LEAF.—Your Pelargonium-leaf was forwarded to that well-known authority “M. J. B.,” who has expressed the opinion that it has the appearance of being a case of common spotting, and one likely to have arisen from the soil having been allowed to become too dry at some time or other, by which many of the fine rootlets decayed, and in all probability were afterwards gorged with water; and this, added to an imperfect drainage, has no doubt produced the decayed appearance of the leaf sent. Unfortunately the initials of our correspondent were lost, but there is no doubt the reply will be recognised.

In answer to correspondent A. M. A., whether the gas-tar he had plastered over his frame will kill the plants, I once had something similar: I got a pit built for the protection of bedding-plants in winter and for growing Cucumbers in summer. The walls and flues were built with gas-lime, which had a very strong smell of gas. I was afraid of getting my plants destroyed, but, being forced by hard weather, and having no other place for them, they were put in that day it was finished. I was very careful in giving all the air that the weather would allow, and I am happy to say that I did not lose a single plant; indeed they grew strong and healthy after they were taken out. I planted Cucumbers, and had an abundant crop. It has been used as above for three years, and I never saw any ill effect it had upon the plants; but if A. M. A. still fears, let the tar be washed over with hot lime, and that will remove the smell to a great extent.

ADAM RENTON.



THE GARDENER.

FEBRUARY 1870.



THE ROYAL HORTICULTURAL SOCIETY AND THE HORTICULTURAL PRESS.



ON the 28th of December last, a communication bearing that date, and signed by the Assistant-Secretary of the Royal Horticultural Society of London, was addressed to Mr Richard Dean, one of the Editors of the 'Gardener,' wherein was contained the following suggestive passage: "I regret to inform you that, in making the annual changes in the constitution of the Floral Committee, your name was chosen as one of those whom the Council were compelled to withdraw from that body." It would be interesting to know the nature of the compulsion brought to bear on the Council of the Royal Horticultural Society, so as to create a necessity for the removal of the name of Mr Dean from the roll of the Floral Committee; and further, the readers of the 'Gardener' will not fail to be struck by the singularity of the coincidence, that this act of the Council takes place simultaneously with Mr Dean's appointment as one of the Editors of the 'Gardener.'

Hitherto, and up to the last meeting of the Floral Committee in 1869, the changes in that body have been made as follows: the Secretary read a list of attendances of each member during the year, then the names of a few of the members whose attendance had been lowest during that period were struck out, and other names substituted, it being understood that the list of names so modified was to be submitted to the Council for their concurrence. Such a practice might be open to objection, but it had the merit of being both above-board and intelligible. On the 2d of October last, the Editors of the 'Gardeners' Chronicle'—and seeing that one of the Editors holds the position of

Floral Director of the Royal Horticultural Society, the passage might fairly be considered as constituting a kind of semi-official declaration—thus stated the principle which has usually governed removals from, and appointments to, the Floral Committee: “It has been customary—and we think it a proper custom, to make a slight change annually, so as to admit some three or four new members; and in order that this may be done without injustice or invidiousness, we believe the plan of selection has been to strike off those whose attendances have been fewest during the year.” On Tuesday, December 21st last, the Floral Committee met for the last time in 1869, and, singular to state, no list of attendances of members during the year was read as had been usual; no mention was made of striking off a single name in consequence of infrequent attendance; a few nominations were made; and the Committee broke up, wondering why the customary procedure was not followed, the majority of the members of that body severely censuring such a state of things as involving much personal uncertainty, not called for, and certainly not assuring. The letter of the Assistant-Secretary, conveying to Mr Dean the notification of his expulsion from the Floral Committee, made no mention of the reasons for the departure from the usual custom observed at the last meeting of the Floral Committee in the year; and yet, with two exceptions, Mr Dean had attended the whole of the meetings of the Floral Committee at South Kensington during the year, and he therefore could not have been dismissed for non-attendance; hence the necessity for departing from the customary rule, which regulated dismissals from the Floral Committee. An appeal was made by Mr Dean to the Chairman of the Floral Committee, in order to learn the nature of the reasons assigned for his removal from that body, and by that functionary he was referred to the Council. The next step was to wait on Colonel Scott, the Secretary of the Royal Horticultural Society, in the hope of gaining the information sought; but Colonel Scott stated that he knew nothing of the matter, not having attended the meeting of the Council on the 21st of December. On the 30th of December, Colonel Scott wrote as follows:—“I find that the report of the Sub-Committee appointed to consider the revision of the Floral Committee list was considered and approved by the Council at their last meeting, at which, as I told you, I was not present. Had I been present, however, I could not but have concurred at once in the propriety of receiving the recommendations of a Sub-Committee of five gentlemen, of whom three were members of the Council, and one of these three the President of the Floral Committee.” A postscript to this communication stated that—“the gentlemen who go off with you are Messrs Jackman, Ivery, and Veitch.” Now, in regard to these three gentlemen, it may be stated

that during 1869 Mr Ivery was present at a few meetings of the Committee, Messrs Jackman and J. G. Veitch at scarcely a single meeting, if at one. There was therefore a fitness in the removal of the names of these gentlemen from the roll of the body, but not in the case of Mr Dean ; and yet the Council of the Royal Horticultural Society withholds an answer to the reasonable inquiry — on what principle has the name of Mr Dean been selected for special and unusual treatment in this matter ?

The members of the Sub-Committee present at the meeting of that body when the annual changes in the constitution of the Floral Committee were agreed upon, were the Chairman and Secretary of the Floral Committee and the Floral Director of the Society, and this meeting was held previous to the meeting of the Floral Committee on the 21st of December last. Why to these functionaries should have been intrusted at this particular juncture the duties properly belonging to, and hitherto discharged by, the Floral Committee, certainly seems to need explanation. There is every reason to believe that the Chairman of the Floral Committee had in his pocket, on the occasion of its last meeting in 1869, a list of the members of that body, as revised by the Sub-Committee, and it would be interesting to know why the proposed changes were not laid before the Floral Committee, as had hitherto been done ; but now that the object of the Sub-Committee appears to have been the getting rid of one member of the Floral Committee apparently personally obnoxious to them, the omission is not to be wondered at. There is an ugly aspect to the business, neither creditable to the Sub-Committee nor calculated to shed lustre on the Council of the Society.

And this view of the subject, as contained in the last two sentences, is strongly impressed on the minds of a large majority of the members of the Floral Committee at the present moment. They feel they have not been treated with much courtesy by those who, it would appear, take upon themselves to advise the Council as to the removal or nomination of the members of that body ; and that such a mode of proceeding as that exposed in the present instance can only end in doing great injury, not only to the efficiency of the Committee, but to the Society itself. Being men of spirit and honour, they have already taken a decided and firm step in the way of manifesting their great dislike of such questionable proceedings ; and there is reason to believe prompt measures will be taken to prevent the recurrence of such a scandal in the future.

But let us be just to the Council. That body must not be held morally responsible for all the actions of its officials. There are in that body men of culture, position, and attainments ; men who love fair-

play—who are honourable, just, and upright. With deep regret be it stated, these fair names can be sullied over with seeming wrongdoing through the action of a Sub-Committee of the officials of the Society, done in their name, and stamped with their approval. From the occurrence which unfortunately casts a passing reflection on them, they will learn something of the existence of an evil which has given much cause for regret to many of the Society's best friends. Once made aware of this by seeing in how unlovely a character it manifests itself through its secret workings, the moment which shall witness its effectual and permanent repression cannot be far distant.

Lastly, the public instinct will readily seize on the circumstance of the expulsion from the Floral Committee at this particular time of one of the Editors of the 'Gardener' as lending a confirmation to the charge frequently brought against the Council of the Royal Horticultural Society, that it favours certain horticultural journals to the hurt of others. Such a consideration as this should have had due weight with the Sub-Committee, but in their ill-judged haste they seemed to care but little for the reputation of the Council, as they make that body responsible for their act. If they are all we believe them to be, men of honour and integrity, they will not hesitate to demand, at the hands of the Sub-Committee, the nature of the reasons that induced them so to compromise the high character of the Council.



NOTES OF THE MONTH.

THE New Year has opened strangely, characterised by singular variations of weather—heavy rains, then hard stern frost, immediately succeeded by a close foggy atmosphere and warm dull days; and then violent raging storms of wind and rain, so wild and strong in their terrible rage that destruction of life and property, alike on land and at sea, has followed in their wake: and these, again, alternated by balmy sunny days, as if spring had prematurely awakened to active being ere the soft winds had whispered to her that her appointed time was come.

With the close of the year two men of some standing among practical horticulturists passed away from our midst. One was Mr William Perry, for many years with Messrs Thomas Rivers & Son at the Sawbridge-worth Nurseries, and who was well known at the exhibitions of the Royal Horticultural and Royal Botanic Societies as an excellent judge of Roses. Pains-taking, straightforward, and always kindly and courteous in his demeanour, he was much respected in his particular walk

of life, and his death may be said to be the snapping asunder of one of the links in the chain that binds the present of horticulture to what belonged to it in the days that have passed away. A more notable man was Mr William Barnes, of the Camden Nursery, Camberwell, London, who died at the close of the year, well known, and as widely respected and deplored, leaving behind him a reputation as a plant-grower never perhaps surpassed and rarely equalled. Born in 1809, in the county of Surrey, he might be said to have always belonged to the London district—the scene of his greatest triumphs and his most splendid successes. Like his father before him, he adopted the profession of a gardener when about nine or ten years of age—even then he had made British plants his special study. From the ‘Gardeners’ Chronicle’ we learn that “about three years later he left home and came to London, where he was employed by Mr Moore, the then great early fruit, plant, and vegetable grower, of the King’s Road, Chelsea. At this time Mr Moore’s foreman and manager was William Barnes’s brother James, late of Bickton. In the year 1824, William Barnes was under-gardener at the Earl of Onslow’s, in Surrey, from which place he went to the Messrs Young’s nurseries at Epsom; and from there to Plastow Lodge, Bromley, where horticulture was then at its zenith. Some three years later he was engaged as gardener to George Ward Norman, Esq., where he soon began to carry out his ideas in plant-growing. Although the place was small, with very little glass or other convenience, he grew stove and greenhouse plants, Heaths, Azaleas, and New Holland plants in general, to such perfection as had never been seen, surpassing all the great plant-growers of the day, as may be seen recorded in the ‘Proceedings’ of the Horticultural Society of London. The story of his triumphs in this department is thus recorded by his old friend, Mr W. P. Ayres, in the ‘Nottinghamshire Guardian :’—

“The first time Mr Barnes ever exhibited was at Chiswick, when he came out with a collection of fifty stove and greenhouse plants, and took the first prize—the first gold Knightian Medal, value £10, ever awarded by the Society. As a contrast to the enormous plants exhibited at the present time, we may say that Mr Barnes conveyed his fifty plants in one van with one horse! but, as an example of the progress he made in plant-growing, we may state we have seen his collection when he required eight vans and sixteen horses to convey the same quantity of plants. Cramped for means, having only five small houses (two of them filled with Vines—one, which filled the larger house, the finest Muscat of Alexandria Vine perhaps in Europe, being nearly two hundred years old, and still in vigorous health)—the wonder was how Mr Barnes could produce such gorgeous collections, especially as his excellent employer did not care about exhibiting, but would rather have kept the plants at home. Thus the expenses of conveyance to shows, and also of replenishing the collection of novelties, fell mainly upon Mr Barnes. To go to Bromley Common in the exhibition season, say a few days before one of the great shows, and from what you could see in the glass-houses you

would return with the conviction that 'Barnes could not show at all.' Such has been the avowal of scores; but they did not go into the back sheds and Mushroom-houses, neither did they explore the barns nor look under the Cedar trees upon the lawn, where plants of rare excellence would be set out in the full light to colour. These things, unless they were intimate friends, they did not see, and hence concluded that Barnes had nothing to show. On one occasion, and the last time Mr Barnes showed a large collection at Chiswick, he had staged a superb group of fifty stove or greenhouse plants in flower, not having a duplicate plant of any kind. The first prize was given to his rival, because she had two plants of this, two of that, and two of the other thing—facts which, with discriminating judges, would have placed the collection incontestably second. Mr Barnes returned home disgusted. On the following morning (Sunday), Mr Norman went to him in the garden, and condoling with him for the wrong to which he had been subjected, gave him, as a *solatium*, a cheque for £50. We see the tears in our honest friend's eyes as he told us a few days afterwards of this act of considerate kindness, and we mention it now, perhaps for the first time, as a public fact. Never afterwards did Mr Barnes show the large collection at Chiswick, remarking to us, 'I can take my own van, and clear £10 and my expenses; while by showing the large collection, if I gain the first prize, I am frequently a loser by the expenses.' Shortly after this, when the want of the Bromley collections made a sad gap in the shows at Chiswick, it was tauntingly asserted that those only abstained from showing there who were sure of being beaten, pronouncing at the same time a grand eulogium upon the Ealing Park plants. On the following Wednesday was the great show at the Royal Botanic Gardens, and Mr Barnes, to resent the taunt, took up the gems of his collection—and they were gems—and beat the Chiswick prize collection with ease,—caustically retorting upon Dr Lindley, 'they are not good enough for Chiswick, but they are good enough to beat the best you can get there.'"

As a nurseryman, Mr W. Barnes had proved successful, and his nursery at Camberwell, though somewhat small and unpretending, was well worthy a visit at all seasons of the year. As a judge, both at the metropolitan and some of the leading provincial shows, his services were much in request, and in the 'Journal of Horticulture' of January 6, the Rev. Mr Dombain of Deal bears kindly testimony to his great and special qualifications for his work. In private life he was much respected; he was a good and just man, leading a simple unpretentious life; sorely afflicted at times by a trying bronchial affection, and at length, overcome by it, he was seen softly sinking down towards the death that has removed him from us. "Cradled in its quiet deep," we leave him to that hallowed sleep, holding him to our hearts in pleasant memories not soon to be effaced. He too was a strong link binding our times to those which twenty years ago he made so famous, and his death also weakens the hold of the past upon the active and progressive present. In the removal of a third, Mr John Sladden of Ash, next Sandwich, floriculture loses one of its most devoted sons. He has passed away just as the prime of life glides almost imperceptibly into age. In the strength of his floricultural manhood, he identified himself more closely with the florists of the midland districts rather

than with those of the south. He came prominently on the public scene at the time of the establishment of 'Gossip of the Garden,' in 1856, by John Edwards and E. S. Dodwell, and the first article of the first number bore that signature which remained with 'Gossip' till it ceased to exist in 1863—A. S. H.; and in the 'Florists' Guide,' which succeeded 'Gossip' for a brief season, his signature also appeared. Though known to us by sight, we had no personal intercourse with him, but he wrote like a man with genial kindly sympathies, and with a heart full of regard for those attracted to the culture of flowers, like himself. During the past two or three years he made the culture of the *Gladiolus* his special study, and exhibited at the meetings of the Royal Horticultural Society when opportunity served, and had succeeded in raising some very promising seedlings. May his memory, like the flowers he loved, dispense a pleasant fragrance!

The schedule of prizes of the Grand National Horticultural Exhibition to be held at the Manchester Botanic Gardens, on the 3d of June next, has just been issued. In addition to fourteen classes, in which all the prizes are special gifts, there are seventy-three other classes giving in the aggregate a sum of £900 as prizes, independent of the special classes. This is one of the most popular, as one of the best, meetings of the year, though there seems to be a probability that the Manchester gathering will not have in the future the magnificent plants belonging to H. L. Micholls, Esq., by means of which Mr Baines has gained such a high reputation as a successful grower, seeing that Mr Micholls has recently removed from Manchester to the neighbourhood of London.

Mr W. Egerton Hubbard, jun. of Leonardslee, Horsham, has placed at the disposal of the Royal Horticultural Society the sum of £8, of which the sum of £5 is to be given for the best 'Essay on the Management of Cottage Gardens,' and a further sum of £3 for the best 'Essay on Window Gardening.' These essays are to be sent in to the Secretary of the Royal Horticultural Society on or before Wednesday the 16th of February next. The object of these essays is thus stated by Mr Hubbard:—"By putting together some plain directions in a form that uneducated people can understand, to enable cottagers to make the most of their gardens; and it seems to me that hints as to the best kinds of seeds, or the best paying vegetables and fruit-trees, will be the most valuable part of the essay, but the main object will be simplicity of language and clearness of expression." This information is intended to be printed on cards, and placed in the hands of the secretaries of cottage garden societies, &c., for distribution. We hope that competent men—men with the special knowledge required for the purpose—will be selected to examine the essays and make the awards.

HINTS FOR AMATEURS.—FEBRUARY.

It may not be out of place at this season to mention a few of the most useful sorts of vegetables for the benefit of the inexperienced, and others who have to make their choice from catalogues for the first time. I would first remark that the descriptions generally given are, I believe, done honestly, but as soil, culture, and situation make such a difference in the quality and general appearance of some vegetables, seed sown from sample, and treated under various circumstances, can be made to assume entirely different habits. As an example, Peas sown on poor, shallow, and light soil, may only attain the height of 3 feet, with the straw weakly and pods small; but if sown on deep, strong land, and allowed plenty of room, they might grow to 5 or 6 feet. Out of many kinds (old and new) which we have grown here, and seen elsewhere, the following sorts are favourites:— Among broad Beans, Johnston's Wonder and Broad Windsor are good; and Dwarf Fan, for filling up small borders, is useful. Beet, Sang's own selected, if well thinned and not sown too early, is extra fine. Dewar's is very handsome and free from fibre. Dell's or Osborn's is also good, and has extra-fine foliage. Broccolis, I find, are very numerous under different names, and difficult to get true. Among the best we have seen are Walchëren, coming in from September to mid-winter. Snow's Superb, Backhouse's Protecting, Knight's Protecting, Carter's Champion, and Gordon's Protecting, ought to give a supply till the middle of June. A kind we are growing this year named Lauder's Superb, late Goshen, offers well: it seems very hardy, dwarf, and compact. Among Cauliflowers, early London, Stadtholder, and Walcheren are very good. We fail to see any difference between the latter and Walcheren Broccoli. Cabbage are very difficult to secure true; Early York, M'Ewan's, and Vanack are good. Carrots for early work; French Horn is the best; James Scarlet and Red Surrey are good for general use. In Celery, for fine flavour, dwarf habit, and hardy constitution, Sandringham with us has outdistanced all others; however, it is identical with the first sample we received of Turner's Incomparable. Years have passed since then, and we have only seen that variety once during that time. Ivery's Nonsuch Pink and Cole's Dwarf Red are always good with us. Out of some eight or ten kinds of Cucumbers, Lord Kenyon's and Highland Mary (Cuthil's) have borne the heaviest crops of fine crisp fruits; Telegraph, Pearson's Long Gun, and Cox's Volunteer are also first-rate where good quality is valued. Leeks are now grown under many names; we found three kinds last year the same as Aytoun Castle, which is a very good one. Good kinds of Lettuce are numerous: among Cabbage kinds, Drumhead and All the Year Round are

very good. Bath Brown Cos and Paris White Cos are very useful kinds. Onions : we tried fifteen or sixteen kinds last season on various soils and situations, and the two best for general use and keeping are Danver's Yellow and James's Keeping. Reading is very good ; we have grown Nuneham Park three seasons and find it good, but not equal to some others. Giant Madeira is useful where size is the only object ; it does not keep well : White Lisbon and Strasburg are suitable for autumn sowing. Among the best Radishes are French Breakfast, Olive Shape, and for summer use Red and White Turnip Radish still hold their own. The best Savoy we have grown are, for first, Pancalier Joulin, Dwarf Green Curled for general crop, and Drumhead for size. Turnip for first crop, old White Dutch ; for summer use, Snowball : Red and White American Stone are very useful as late sorts. It is very difficult to decide on varieties of Potatoes, and perhaps there is no vegetable changes its character (when grown in various soils) more than the Potato. Veitch's Ashleaf and Mona's Pride are good among early Kidneys ; the latter is liable to come up blanky. Smith's early Milky White and Dalmahoy are very good as first, second, and third early round kinds. Fortyfold, when grown widely apart on good dry soil, is still one of the best, and crowded on damp ground it is one of the worst. The Pea crop is always an interesting one. Among many which we gave a trial last season, Dillistone's Early, Sangster's No. 1., and Little Gem (for borders, &c.), are first-rate for early work ; Dickson's Favourite, Laxton's Prolific, Prince, and Supreme were good seconds ; M'Lean's Wonderful, Champion of England, and Veitch's Perfection, are excellent on rich ground, sown thinly, and plenty of room between the rows. Jaye's Conqueror we observed in the leading collection of vegetables at the late International Show held in Edinburgh, and to all appearance it was the best Pea in the room. Some Peas we have seen this season bearing excellent crops, but of very poor flavour.

In most gardens attention will soon be given to sowing a few seeds, such as early Carrots, Radishes, Brown Cos Lettuce, Cauliflower, and early Cabbage,—the last three under protection, such as handglasses, hoops and mats, or in boxes of earth placed under glass. The two first, to have a chance at all, must be kept from frost, covering and uncovering when necessary. Where frames are at command, much labour will be saved. A pinch of Kale, Brussels Sprouts, and Red Dutch Cabbage may be sown : though spring sown, and smaller than that sown in autumn, they are finer in quality. Beans and Peas may be sown every three weeks in succession as required. In very small gardens limited quantities only should be sown early, so that a regular succession may be kept up, to prevent a glut at one season and shortcoming at another. The sowing of Peas very wide apart (allowing the

rows to divide off, systematically, other crops) is now becoming very general, as it is by far the most productive system, and the pods are more easily picked. Beans may be sown from $2\frac{1}{2}$ to 3 feet apart. For small seeds, such as the Brassica tribe, the soil should be made very fine and the drills shallow; dry weather should be chosen for sowing. A row of Parsley may be sown on an early spot, leaving a good border for sowings to supply autumn and winter. If weather is dry, and the soil in proper condition towards the end of the month, Onions and Parsnips may be sown. Though they both will do well later in the season, we do not like to lose any favourable opportunity. For the Onions, drills drawn 9 inches to 1 foot apart, slightly covering in the dry soil and thoroughly treading, will answer well. Parsnips may be sown in drills 2 inches deep, and the rows may be from 15 to 18 inches apart. Make the surfaces over newly-sown seed smooth and level with a rake, but at all times avoid treading on newly-sown ground in wet weather. A sloping bank may be thrown up on which to sow early seeds. Leeks may soon be sown in a box, but unless they are wanted very early, a sowing on an early border will answer well enough. Potatoes should be kept cool, but if they are sprouting it would be well to plant them, and keep the tubers free from frost.

To keep a garden orderly and to make the best of it, all crops should be arranged systematically, keeping each kind as much by themselves as possible, avoiding small patches scattered through the garden, so as to get the ground worked advantageously. Winter crops should be kept together, and for crops which require sowing or planting in quick succession, a breadth should be set aside. Salads and Spinach (where ground is scarce) can always be sown between other growing crops, and cleared off in time to do the latter justice. To clear ground at this season, crops of Kale, Brussels Sprouts, &c., may be lifted, and have their roots placed in soil behind a wall or hedge closely together. Celery may also be lifted and placed in sand. Walks may be turned and rolled down firmly, bringing forward all arrears as quickly as possible.

All tree planting, lifting, &c., left unfinished, should have attention when weather will allow the work to be done. If protection (by canvas, frigi-domo, or otherwise) is to be used for trees on walls, it should be examined and got ready. There is much which might be done by retarding fruit-blossoms; and commencing early with protecting will do much towards that end. Boards lapping over the top of the walls are of great service in keeping the trees dry. If strong sun can be partially kept off by thin material, the buds will expand slowly and be subjected to less extremes of temperature. Apricots may be pruned soon, leaving enough of wood to clothe the tree regularly, avoiding crowding. All stunted and useless wood should be cut clean out, and shoots com-

ing out of the tree should not be left. Much cutting of Apricots is liable to produce canker. Peaches, if very forward, may be pruned towards the end of the month, cutting out all shoots which carried fruit last year, leaving young ones to take their place, always choosing, if possible, those from nearest the main branches. There need be no hurry in nailing them up, as when they are close to the wall the buds open rapidly.

Cuttings of bedding plants may be got in rapidly, using sandy soil, carefully watering, allowing no damp to remain about the surfaces. Shade from sun sufficiently to keep them from flagging. Cuttings root more freely when they have been taken from plants growing freely in heat. Keep up a high temperature; but when the cuttings are rooted they may be taken to more airy quarters, making room for fresh batches. Dahlia roots may be started in warmth, to increase the numbers. When short stout cuttings are formed, they can be taken off with a heel and placed in the centres of small pots, using sandy soil, and, plenty of heat allowed—say 70°, and 10° higher with sun heat—they will root very quickly. Carnations and Auriculas in pots require plenty of fresh air to keep them healthy. The latter may be well surfaced with good loam, cow-dung, and a little sand. Soil should be prepared and examined, to be ready soon for potting Pinks, Picotees, and Carnations which are to be flowered in pots. Plants in pots which are not growing freely should be kept moderately dry, but occasionally looked over, and have a full supply of water when they require it. All the usual forcing shrubs, bulbs, &c., will require care when bringing them from heat to cold, taking others in for succession. M. T.



GOLD AND BRONZE PELARGONIUMS FOR EXHIBITION.

SINCE the introduction of the valuable section of variegated zonal Pelargoniums, there has been no addition to the resources of the flower-gardener of such general interest as that group of Pelargoniums known as the Gold and Bronze section. Considering they have been in cultivation only a few years, they have become very popular, even with such formidable rivals as the tricolored class. This is due in a great measure to their superior growth and hardihood, which render them far better subjects for use in the flower-garden, while by some they are thought to be even more attractive than the painted variegated zonals.

The chief object of this paper is to treat on the propagation and culture of the golden and bronze section for exhibition purposes, and

in doing so, the writer is fully sensible that so much has been written on the cultivation of the *Pelargonium*, many will be induced to think that but little that is new or fresh can be written on the matter. Yet having regard to the many miserably-coloured examples frequently seen at our large exhibitions, it is only too evident that some misconception exists as to the real requirements of the plants. Should the reader have failed in his past attempts to colour the leaves successfully, he may, perhaps, by following the few simple directions about to be given, be enabled to achieve better results.

To secure a good specimen plant, there must be a proper foundation laid, so to speak; and I am led to attach much importance to the selection of a proper cutting, out of which to manufacture the future specimen. Select, therefore, short-jointed points of shoots from 2 to 3 inches in length, which should be taken off during the month of June, and inserted singly in the smallest-sized pots, using a soil made up of good yellow loam, sand, and leaf-mould. Place them in a situation where they can be screened from the full glare of the sun's rays till rooted, and then shift them into 3-inch pots, using a mixture of good yellow loam, with leaf-mould, and plenty of silver or river sand, and don't make the soil too fine; place them in a cold frame where, if found necessary, they can be shaded for a time during the middle of the day, and, if the weather should be showery, sheltered from the heavy rain; but slight showers will benefit them, and the lights can be kept off as much as possible; but when it is necessary to keep them on, give all the air possible. The plants will soon require another shift, and on this occasion a richer compost is necessary. I advocate the use of loam as before, but in place of leaf-mould pure horse-droppings, which should be prepared by being thoroughly dried and then broken up small: use plenty of sand, and break the loam up by hand that it may not be too finely powdered. Mix thoroughly, and in potting avoid pressing the soil very firmly, for to grow the plants well they require during the summer months a plentiful supply of water, and must on no account be allowed to suffer from the want of it. On the occasion of this shift they should be potted into 6-inch pots, and replaced in a cold frame in the open air. Should they be wanted for exhibition during the following May or June, it will be best at the end of August, if they have not branched out into two or three shoots, to cut them back to within 3 or 4 inches of the pot, so as to secure by the end of autumn four shoots at the least to each plant. By the end of September they should be reduced a little at the root and put into a smaller pot, using the same compost, and placing them on a good light airy shelf in a greenhouse. If the weather should be sunny and dry, an occasional syringing will benefit the plants.

During the winter months the plants should be sparingly supplied with water at the roots, and be allowed a temperature of from 40° to 45° at night, and not higher than 50° to 55° during the day in cloudy weather through the months of November, December, and January. About the end of the latter month they should be shifted into 6-inch pots, using the same compost, only rather rougher. Keep the plants in a dry airy situation, and water carefully till the roots are through to the sides of the pots, when they will take plenty of it; and care should be taken that at each watering the ball of the plant is thoroughly moistened, as failure is often attributable to careless and insufficient watering. If not already attended to, the branches will now require pegging or tying down to the sides of the pot; and if not sufficiently branched they should be pinched back to induce it, a process about which the grower is required to exercise some forethought, for some varieties will form a nice plant with fewer branches than others, owing to the much larger leaves they produce: for instance, Crown Prince, or Beauty of Calderdale, will form a good plant with half the number of shoots required to make a nice specimen of Sybil. By the end of March the plants will be ready for their final shift into 8-inch pots; use the same kind of compost, but let it be very rough, and be particular that the pots are well drained: broken oyster-shells are very suitable. Pack the soil rather firmly in the pot, but not so firm as to prevent the water from passing through pretty freely. A pit where a little heat can be given, should the state of the weather render it necessary, will now be the place for them, and if fine and mild, the lights could be taken off entirely on all favourable occasions, as the plants do best with the fullest exposure to sun and air. Thus the plants will be gradually inured to entire exposure to the weather, for after the beginning of May the lights should seldom be on during the day (unless, indeed, the weather proves exceptionally wet and cold); and should the nights be mild, the plants will be benefited by being without them even then. Beyond watering, training, and removing superfluous leaves, they will require no other attention than what has already been indicated. To have them in fine colour during the whole of the year, of course something depends upon the varieties cultivated, and it unfortunately happens that some of the varieties which gained the strongest hold of the public mind are not the best for exhibition. For the guidance of those who may be unacquainted with the names of the varieties in cultivation, I may be permitted to mention a few suitable for exhibition—viz., W. R. Morris, Criterion, Sybil, Prima Donna, Imperatrice Eugenie (D., L., & L.), Crown Prince, Mrs Allan Lowndes, Countess of Kellie, Red Ring, Black Knight, Cleopatra, Harrison Weir, and Princess of Wales. These are

not all, perhaps, well adapted for bedding-out, but I cannot speak positively about this ; the best bedders I know among this class are Kentish Hero, Sybil, Mrs Lewis Lloyd, Beauty of Calderdale, and Imperatrice Eugenie (D., L., & L.)—the last the brightest of all. Two-year-old plants should be cut back in autumn, and when broken sufficiently into growth, shaken out and repotted, and treated as recommended for younger plants. Something may probably be expected from me in reference to the production of new varieties from seed. All I can say to those who may be desirous of making an attempt in this direction is, Procure the best varieties you possibly can to breed from, and seed them early in the season, in order to get your young plants well established before winter, giving them a similar soil and treatment to that recommended for cuttings.

W. B. GLASSCOCK.



THE KITCHEN-GARDEN.

NO. IX.

PARSLEY.

PARSLEY is of such ancient culture in this country that, so far as I am aware, the period of its introduction cannot be correctly assigned. It is said to be a native of Sardinia, and to have been introduced into England about the beginning of the sixteenth century. According to botanical authorities it is not a native of this country, but it has nevertheless naturalised itself in several parts of the kingdom, though the great favour in which it is held by hares and rabbits will prevent its ever spreading itself in a wild state.

Generally speaking, Parsley is of easy culture, but in some soils it is peculiarly subject to the attacks of a small white worm at the root, which interferes much with its growth till late in summer, and in some cases it is destroyed altogether. Some say that if transplanted while in a young state it escapes this pest. I have known it so subject to die out on some soils, that the only way to produce it in quantity is to take out a trench the depth and width of a spade, and fill it up with fresh loam and then sow the seed. The middle of March is a good time to sow for the summer supply. When sown in drills, they should not be less than a foot apart, and to get fine foliage the plants should be thinned out to 6 inches apart.

In many cases Parsley is sown as edgings to paths or walks in gardens, and to this there is no particular objection. For late autumn and winter supply, a good plan is to transplant the necessary quantity

into a border where the protection of frames can be given in winter, and it can be planted close to the base of garden-walls, where in case of frost or snow it can be protected with mats or any other coverings, but it is best under glass both for fine produce and convenience.

A second sowing should be made in April for a winter supply, when it is intended to stand without being transplanted.

The more curled the leaf, the better it looks for garnishing purposes; it is also finer in flavour than the plain leaves. Wherever seed is saved, the best curled plants should be selected for the purpose.

RHUBARB.

To the northern parts of Asia we are indebted for this very useful vegetable. It was introduced into Britain in 1778 by Dr Fothergill, and a good many years elapsed before it was generally cultivated as a culinary vegetable. The first to cultivate it on a large scale was the late Mr Myatt of Deptford, the well-known market-gardener. Not much more than sixty years ago he tied up five bundles of Rhubarb and sent his son to the London market with them, and so little were the Londoners inclined to purchase it that only three of the bundles could be sold. Not discouraged by his first effort to get Rhubarb into favour among such a vegetable-loving people, and believing that it would one day be highly prized, he persevered; and the next time he offered it for sale he had ten bundles, and sold them all. Since then Rhubarb has come to be so generally used that it is sent into the London markets in enormous quantities. The metropolitan market-gardeners now force thousands of roots every year, to say nothing of the supply drawn from the open ground; and this applies to almost every town in the kingdom in proportion to its population.

Almost any soil will grow Rhubarb, provided it be well manured and deeply worked. Heavy loamy soil will of course yield the longest and thickest stalks; but it is generally admitted that a drier and lighter soil gives finer-flavoured produce; so that a soil of medium character may be pronounced the best. The cultivation of this free-growing vegetable is so exceedingly simple that little detail is necessary in explaining it. In making a new plantation the ground should be heavily manured and deeply trenched in the autumn; and when planted, another dressing of manure should be dug deeply into the fresh-turned soil. It can be planted at almost any time. I have planted it when quite dormant, when commencing to grow in early spring, and when it had grown a foot high. On soils that are heavy and damp I prefer planting just as it is beginning to grow; and on dry soils it is perhaps best to plant when quite at rest.

The best mode of planting is to dig up a few well-established stools, and carefully divide them without lifting them entirely, only digging deeply on one side of each stool, and removing a few crowns with strong pieces of healthy roots attached. Planting is more tidily done as the last dressing of manure is dug into the ground, as it prevents the trampling of the ground afterwards. In ordinary cases, 4 feet each way is wide enough to plant. The crowns should not be placed deeper than the surface of the soil if it be heavy, in light soils they may be covered an inch or so with advantage, if quite dormant when planted. Where the ground is clayey, a few spadefuls of light rich soil may be put round each stool when planted.

None of the stalks should be taken from the plantation during the first year, except the flower-stalks, which should be removed as they show themselves. If the season be dry, a few liberal waterings with dung-water should be given, and the ground about mulched. The second year some of the stalks may be taken for use, but it is best to be easy with them, and if intended for forcing none should be taken from them. Indeed, the best stools for forcing are those that have made two or three years' growth without being touched. When not required for forcing, a plantation lasts for many years in a good productive state. But there are very few gardens nowadays where Rhubarb is not required for forcing, and the best way is to plant every year in proportion to the demand. Roots that have been forced are sometimes used for planting again, but it is a practice not to be recommended except in an emergency.

This is a vegetable which can be forced easily in almost any structure where a little heat can be applied. The old-fashioned way of placing pots over the crowns and filling up between and over them with fermenting materials, such as leaves or stable-manure, or both mixed, is not so much practised now as in days gone by, when good Rhubarb was so produced, though with more labour and inconvenience than by lifting the crowns and putting them in places constructed for the purpose, or in Mushroom-houses, &c., which are heated by hot water. The easiest, and in the long-run the cheapest, mode of producing early Rhubarb is to have it, as well as Seakale, in a back place near to any of the garden boilers, from whence some heat can be conveyed. A slight bed of leaves sufficient to produce a little bottom-heat is perhaps the best means of conjunction with an atmospheric warmth of 55° to 60°. The stools should be carefully dug up, the soil shaken from them, and placed close together on a thin layer of leaf-mould, spread over the surface of the leaves, and then filling in all round the roots with leaf-mould or any light rich soil.

Large quantities of Rhubarb are forced in the market-gardens round

London by digging long trenches to the depth of 2 to 3 feet, and putting 2 feet of hot dung into the bottom of them, on which the roots are packed closely together in any light soil. The trenches are then hooped over and covered with about a foot depth of long stable-litter or straw, and in this rude and simple way excellent produce is the result. Others again have long ranges of wooden pits about 5 feet wide, with a hot-water pipe to supply both top and bottom heat. These are, however, giving way to larger structures, in which standing and walking room can be had.

The amateur or cottage gardener who desires forced Rhubarb, can easily produce it in a cellar or any outhouse where a few roots can be placed in a temperature of 50° to 55°. When it is required for table before the end of the year, the roots should be placed in the forcing-house as soon as the leaves commence to decay. The best sorts for early forcing are Prince Albert and Linnæus. The Victoria yields a greater bulk late in the season, and for general crops in the open air is the most profitable. Whether Rhubarb is best when blanched by forcing or when grown in the open air, is a disputed point, and depends on taste. For my own part, I prefer it blanched, and cooked without being skinned.

SALSAFY AND SCORZONERA.

Both Salsafy and Scorzonera require precisely the same treatment, consequently I have classed them together. There are few vegetables so much affected by cultivation, "for better or for worse," as these, and at the same time so carelessly regarded. True, the entire failure of a crop is not of frequent occurrence, for they will grow after a sort under the most careless treatment; but the difference between really well cultivated samples of these roots, and those produced by indifferent culture, is exceedingly marked.

A superior crop depends chiefly on the nature of the soil, and particularly on the manner in which it is prepared. To produce fine roots, a deep sandy loam is the best; it should be trenched, and thoroughly broken to at least a depth of 2 feet; and the subsoil, if retentive, should be broken up with a fork. Soil into which manure has been put for successive years, and by which the top spit has been enriched, should not have any manure added to it, but be trenched, turning the rich surface-soil to the bottom of the trench. Where manure is necessary, it should be mixed in the bottom of the trench, not adding any to the surface-soil. The manure thus placed deep in the ground entices the roots in search of it, and in this way considerably influences the growth of the roots, causing them to grow straight and strong, instead of producing a mere bunch of fibres, scarcely fit for culinary

purposes, as is the case in shallow soil, with the manure near the surface.

Sowing the seed too early must be avoided, or the crop will run to bloom and the roots become hard and useless. The end of April, or in places where there is generally a good autumn growth, May is early enough to sow. The Salsafy should be in drills 3 inches deep and 16 inches apart. Scorzonera should be allowed a few inches more, as its tops are more bulky. When thinned, 6 to 7 inches between each plant is close enough to leave them. It is not a rare occurrence to meet with these vegetables sown thickly and never thinned out at all, but they are as much improved as Carrots, or any similar crop, by being allowed room; and the reverse of this can only result in very inferior roots. Really well-grown roots are much esteemed in winter, and, manipulated by good cooks, both these vegetables form palatable dishes.

The after-treatment is very simple, and consists of keeping the ground between the rows well stirred and clean. Being winter vegetables, they are seldom asked for till November; and as they are very hardy, the roots may be left in dry soils, covered over with litter, and dug up as required, or they may be lifted and laid away in damp sand under cover.

D. T.



ON THE MANAGEMENT OF BEES.

THE substance of the following and succeeding communications was delivered in the form of a paper entitled 'Half an Hour on Bees,' and was read at one of the Hanwell (Middlesex) penny-readings by a "Hanwell bee-master."

In saying a few words on behalf of my especial favourites, I trust they will tend to a better understanding of their nature and habits, and of some of the causes of failure and disappointment that often mar the best attempts and aims of the bee-keeper. I have no more to say on the natural history of the bee than may be necessary to explain phenomena alluded to as I take my way in pursuit of my subject; nor shall I advance any statements, theories, or so-called facts, culled from any published works, on the subject of bee-management, but shall state only what I know to be true from actual experience. Published works are in many cases little better than advertisements; and their theories, statements, and facts contradict each other proportionately as each particular writer is interested in the system he endeavours to uphold.

Bees may be profitably managed under any system but that of systematic neglect, and the wilful disregard of the dictates of common-

sense, which is so prevalent among the prejudiced; but no system can be perfect which does not give the bee-master entire control over every comb in his hive, and every part of the hive itself. My observations will be confined to bees in straw skips, such as were used by our grandmothers and great-grandmothers, whose principal knowledge of bee-management consisted in their ability to hive a swarm in spring, and to take the honey in autumn, which latter operation necessitated the previous destruction of all the bees in the respective hives by a violent and cruel death.

Bees are property of great value, and in ordinary seasons, with proper management, require no feeding at all; and by the exercise of care, and the possession of a right understanding of their nature and habits, will yield a profit of at least a hundred per cent per annum after they become well established. As a rule, bees are very badly treated. If a stock or a swarm be obtained, it is generally placed on a stand with perhaps just sufficient shelter to keep off the rain if it would always fall perpendicularly, and quite unprotected in any other way; and no servant or visitor is allowed to interfere with it in any way, while the owner is generally afraid to do so.

Any idea of improving the breed of bees by crossing them with any superior kind, or even of causing a change in that respect by obtaining a stock from a long distance at swarming-time, does not seem to have been thought of or recommended. They are left to themselves, and to their own instincts, until they all become blood-relations; and their vitality and ability to propagate their own species thereby become so materially interfered with and lowered, as to render them in many instances physically unable to fulfil the natural conditions of existence; and such stocks are always weak, dwindling, and unprofitable. Such treatment, at best, shows a great want of wisdom. All those who keep bees on the old principle know that in early spring their best stocks cluster by thousands on the outside of their hives; and as the earth puts on its summer verdure, and adorns itself with multitudes of flowers, and the land literally "flows with milk and honey," the bees are comparatively idle, while the honey is wasting its sweetness at a time for which, according to the teachings of instinct and reason, they were designed to put forth their working powers to the utmost. Why is this? Honey and pollen are abundant, and it is perfectly natural for bees—I had almost said the end for which they were created—to collect and store them; and yet for many days, and even weeks, they remain idle, until the golden opportunity has passed. Why? Because the bees have no room in their hives to store honey or pollen if they gathered it. The queen having occupied nearly all the cells with living brood, the heat within the hive causes the mature bees to be

crowded out, and they cluster in heaps about the mouth of the hive, idle and listless, while the bee-keeper stands by in blissful (?) ignorance, waiting for his bees to swarm. Waiting for bees to swarm is weary work. We do not wait for ripened fruit to fall from the trees before we garner it. We exercise our judgment, and gather it at a time when experience tells us it is likely to be most useful to us ; and the exercise of the same judgment with regard to bees would teach us, that if ever a swarm is worth having, it must be at a time when flowers are plentiful and honey abundant ; and if at that time working bees are not plentiful too, it must be to a great extent the fault of the bee-keeper. It is in his power to insure that his stocks shall be strong at the times when honey is likely to be abundant. But to insure this he must first be sure that each stock is healthy, and has a fairly prolific queen ; and then he must treat them as he would his chickens—feed them when they cannot get food for themselves, regularly and sufficiently, until the recurrence of the honey season renders such aid unnecessary.

Wealth in bees does not consist in the number of stocks so much as in their individual strength, and the consequent abundance of working bees, and *their* power to collect and store honey, a surplus of which is the legitimate profit in bee-keeping. Swarms may be profitable to a *bee-dealer*, but they are of no profit to a bee-keeper, it being rather his province to prevent them, so that the supernumerary bees may collect honey in the parent hives, instead of consuming it in the manufacture of comb for their new habitation ; for it must be remembered that in the manufacture of 1 lb. weight of comb 25 lb. of honey are consumed, and all the bees so converting it are clustering and comparatively idle. The mere keeping of a number of stocks from which nothing is obtained but swarms is simply absurd. Yet the same quantity of bees gathered into one-third the number of hives would yield a large surplus of honey under ordinary conditions. The reason for this is, that in three weak stocks there would of course be three queens, each instinctively anxious for the welfare of her colony ; but being short of provisions, in early spring she cannot commence laying her eggs, except to a very small extent, until honey and pollen are plentiful, when her propensity is stimulated to such a degree that the honey and pollen are consumed nearly as fast as it is in the power of the working bees to collect them. The reason of this is, that as the eggs and young brood increase, more nursing bees are necessary, and fewer working bees comparatively can be spared from the hive.

The propensity of the queen to lay eggs is governed by the quantity of honey collected daily ; that, in its turn, is regulated by the yield of honey, as well as by the number of working bees that are available to

collect it. By the time the population of such a bee-colony is sufficiently numerous to collect a surplus of honey daily, the spring honey-harvest is over, and the queen discontinues depositing her eggs accordingly, and at the end of the season it will be a weak stock again, alternating thus: in spring, weak in numbers; in autumn, weak in provisions. They may possibly throw off a swarm once in a year or two; but it is sure to be weak and late, and unless under very favourable conditions, it will be only one more weak stock. Whereas, if three weak stocks had been united in autumn, and placed in one hive, they would have had ample provision and plenty of bees; the queen would have commenced laying eggs at the beginning of February, and by the time the fruit-trees were in blossom they would be a strong stock, in a condition for gathering honey, or swarming, as might be most desired by the bee-master. Besides which, there would be two spare sets of combs in the hives from which the weak stocks had been driven, available for early swarms, which might be placed in them if desired.

It is not, however, always in the power of the bee-master to prevent swarming, especially in straw hives, although he may reduce the probability of it to the lowest minimum by giving increased space for oviposition and stowage. All weak stocks may be made strong by gentle continuous feeding in early autumn and early spring, because, while food is abundant and the weather mild, the queen will continue to deposit eggs, and all the bees are enabled to remain at home as nurses.

C. N. ABBOTT.

(To be continued.)



LUPINUS CALIFORNICUS.

THIS I believe to be one of the best *Lupinus* cultivated in the United Kingdom, and one that seems to be little known to practical gardeners and the lovers of flowers generally. Some three years ago I received four seeds of it from Mr Draper of Seaham Hall, Sunderland, who then designated it his favourite *Lupine*. I was so situated at the time that I could not grow the seeds in the season that I received them, but sowed them in small pots in the spring of 1868, and, to make sure of germination, placed them on a slight hotbed. The seeds were good, and germinated freely, and when the plants were large enough, and hardened off, they were planted out in the borders. They grew vigorously all through the summer, and by the autumn the plants were 3 feet high, and about 3 feet in diameter. *L. Californicus* naturally produces a single stem the first year, which branches freely on all sides,

giving the plant a pyramidal form. The leaves are not so large as in many of the perennial varieties; they are, however, of a dark velvet-like green, and the plant, being decidedly evergreen, has a fine effect during the dull months of winter. It has more the appearance of an evergreen shrub than anything else. As none of the plants flowered during the summer, and not knowing whether they were hardy or not, I took the precaution to have one carefully lifted, potted, and put under glass for the winter. To my delight, however, I found that the plants left outside continued to live and grow, and actually seemed greener and healthier for the exposure. They did not suffer in the slightest degree from the effects of frost. By the middle of the following June they were a complete mass of bloom, literally covered with long spikes of buff flowers, which continued in fine condition for more than a month, and were the admiration of all who saw them. Mr Draper (to whom I lately wrote concerning the Lupine) informs me that he finds the plants to increase in size yearly, and that he has had them as much as seven years old, and several yards across. He likes them best when about four years old; after that he says they get loose, straggly, and untidy. Mr Draper further informs me that the seeds of the plant were sent to his then employer (the late R. Mangles, Esq. of Sunning Hill, Berks), from California, and afterwards forwarded to him (Mr D.) at Seaham Hall, where he finds it to do remarkably well, being the most conspicuous plant in the garden during the time it is in flower.

For growing in front of large shrubberies I know of no better flowering-plant. I am only surprised that it has been so long in the country, and yet is so little known. Several nurserymen, and many practical gardeners who have been calling on me this summer, were much pleased with its shrub-like appearance, and said they had never seen it before. The plants here at date of writing (19th Oct.) are 6 feet high, and from 4 to 5 feet through, with a thick stem like a young tree.

A. PETTIGREW, *Gardener*.

DUMFRIES HOUSE, CUMNOCK, N.B.

So many species of the *Lupinus* have been introduced from California at various times, that in order to identify the form of which Mr Pettigrew writes as *L. Californicus*, his paper has been held over to allow of inquiries being made. A sprig of the plant, together with a seed-pod, was sent to Kew, and duly examined, and we have been informed that no trace of any such name as *L. Californicus* can be discovered, but the specimen sent was believed to be quite identical with *Lupinus arboreus* of Sims, as figured in the 'Botanical Magazine,' t. 682. Mr Kingston, who supplies this information, also states, "I have just now observed that Mr Pettigrew describes the flowers as buff in colour, which I did not notice at first, and which agrees with *L. arboreus*." There is, therefore, every reason to believe that what Mr Pettigrew has as *L. Californicus*, is *L. arboreus*. Some years since, the Royal Horticultural Society distributed a

species under the name of *L. Californicus*—a hardy annual with blue flowers, growing some 18 inches in height, flowering in June and July, and said to be a good plant for beds. This appears to be lost to our gardeners under this name, as it cannot be found in any lists.—EDS.



THE CULTIVATION OF HARDY FRUITS.

(Continued from page 12.)

THE CHERRY.

NEXT in point of importance to those fruits already considered is the Cherry. Different authors have given different classifications, divisions, and subdivisions. To my mind the two best are those of Mr Thompson—which were first published in the ‘Horticultural Transactions,’ second series, vol. i. p. 251, and afterwards by him reproduced in his ‘Gardeners’ Assistant,’ page 256—and that of Dr Hogg, at page 68 of the third edition of his ‘Fruit Manual.’ The former, by Mr Thompson, is the more elaborate of the two, and the best suited for defining minutely small points of difference existing between kinds which, although closely resembling each other, yet present appreciable differences. Cherries he has divided into two classes, the first having leaves waved on the margins; the second having leaves with the margins plain. Each of these classes he has divided into two divisions, the first representing “fruit heart-shaped, oval, or roundish;” the second, “fruit round or oblate.” These divisions are each subdivided, the first into three orders, each according to the colour of the fruit. The second also into two orders, the first including Cherries with “flesh sweet;” the second, Cherries with “flesh acid.” This is further divided into sub-orders, the first being Cherries with “juice pale;” the second those with “juice purple.” This, to my mind, is the best and most simple, yet the most elaborate and comprehensive arrangement we possess. Any man of ordinary intelligence can easily arrange the class, division, or order to which any Cherry may belong by the aid of Thompson’s classification.

Dr Hogg classifies all the varieties of Cherries under eight races. His arrangements, although admirable, are not so well defined as those already noticed. His eight races are—1st, The sweet heart-shaped Cherries with tender and dark-coloured flesh, which he has termed Black Geans; 2d, The pale-coloured sweet Cherries, with tender and translucent flesh and skin, which he terms “Red Geans.” The 3d he terms “Black Hearts,” which are those “dark-coloured sweet Cherries” somewhat resembling the Bigarreau, but whose “flesh is not so firm and crackling.” The 4th includes the White Hearts or

Bigarreaus, with red or light-coloured mottled skin and hard crackling flesh. The 5th he terms Black Dukes, and have dark skin and flesh and deeply-coloured juice. The 6th embraces all those nearly allied to the Black Dukes, but with pale red skin, translucent skin and flesh, and uncoloured juice; these he calls Red Dukes. The 7th includes all those the trees of which have long, slender, and pendant shoots, and dark-coloured fruit with acid-coloured juice, and are termed Black Morellos. The 8th he designates Red Morellos; they include all those pale red acid varieties of which the Kentish Cherry is the type.

As in all other kinds of fruits, new varieties can only be obtained from seed. The same care in the selection of parents ought to be exercised with the Cherry as in the case of other fruits. Only by using such means can success be hoped for. No doubt we have many varieties, which, so far as flavour is concerned, are sufficient to meet the requirements of most palates. The principal object to be aimed at in the production of new varieties is to prolong the season of the sweet Cherries. The beginning or middle of September is the latest possible time we can have them now; but with care in selecting parents, I hope this period may eventually be extended at least another month. Next in importance is an increased size of the fruit. This may not be of such easy accomplishment, yet I consider it to be an aim worthy the attempt. He who accomplishes one or both of these objects, will have a claim to the gratitude of all horticulturists. Whether the raising of stocks or of new varieties be the aim, the stones of the Cherry may be sown when the fruit is used; or, to quote Mr Thompson, "They may be stratified till early in spring, when those that are beginning to germinate should be planted in drills and covered over to the depth of $1\frac{1}{2}$ inches." They are generally sown in the summer in drills an inch deep, on light sandy soil, into which the stones may be deposited 2 or 3 inches apart. In the following spring they will germinate and make a small shoot; while the second season they will make shoots varying from 1 to 2 or 3 feet in length, according to the varieties, and the health and vigour of the plants. The small black or red wild Cherry is recommended by some as being the best to use for stocks, while the Duke and Morello Cherries are also favourably spoken of by others. At the end of the second year's growth the seedlings should be taken from the seedbeds, and planted in nursery-lines 2 feet apart, and 1 foot between the plants in the line. After making another year's growth the best of them will be ready for budding or grafting, as the case may be. If they are to be worked as standards at the height of 4 to 6 feet from the ground, it will be necessary to grow them on for

two or three years longer, tied carefully to a stake to the desired height. Those grown for this purpose will require to be planted wider in the rows than those intended for working as dwarfs. Nurserymen sometimes use layers, suckers, or cuttings, to work the Cherry on. This is a bad practice, as the trees are never so healthy nor so long-lived as when the stock is raised from seed. As already indicated, known varieties are propagated by budding and grafting on stocks raised for the purpose. Budding is recommended by some as being the surest method of securing success; the bark of the Cherry being so thin that it is a difficult task to insert a graft neatly and securely without injuring the epidermis. Others affirm that trees which have been grafted are far more liable to gum secretions than those which have been budded. I can affirm regarding the former point, that, in my experience, budding is most easily performed of the two, and the one found most successful. I would, therefore, recommend budding the Cherry. The best time to bud is the end of July, or beginning or middle of August. As a rule, this must be performed when stock and scion or bud are in the best condition. The wood from which the bud is taken must be hard, firm, and comparatively ripe. The bud itself must be plump, firm, and brown, with a nice fresh leaf at its base. If these things be the case, then the budding may be proceeded with, as the bud with a portion of the bark attached will readily part from the wood of the branch. The bud may be inserted in the stock in any of the modes in general use, but the simplest and best, to my idea, is that known as the shield or T budding, already referred to in connection with the Pear and Apple. Great care should, however, be taken at all times never to bind too tightly, as in the case of the Cherry nothing is more likely to cause gum to exude than bandages tight enough to mark or cut the bark. Those who may wish to graft Cherries may do so at the usual grafting season in March or the beginning of April. The scion should in every case be taken off in winter—not later than the end of December or beginning of January—and inserted in the ground till required. Mr Thompson, giving his experience on this point, states, “We have seen vigorous shoots with large pith cut off for scions, and stuck in the ground in January; and though in March, when grafted, the pith was discoloured, being of a dark instead of a light colour, yet they all succeeded; whilst scions cut off and grafted fresh failed to a considerable extent, although treated with the same care in every other respect.” The grafting of the Cherry is performed in a similar way to that already recommended for other fruits. JAMES M’MILLAN.

(To be continued.)

NEW PLANTS OF THE PAST MONTH.

BUT a scanty record completes the list up to the close of 1869. Cold inclement weather, with nipping winds and attendant frost and impending snow, is scarcely favourable to the production of new plants, even were it not a season of the year when they are invariably scarce. Messrs Veitch & Sons have exhibited, and obtained a first-class certificate for, a fine new *Hippeastrum* named *Leopoldi*, a grand companion to the novel *H. pardinum* they exhibited some time ago. The one now exhibited was so named in honour of the King of the Belgians, who was struck with its beauty, and gave his permission for it to be named after him. It is a bold showy flower, with a claret-crimson centre and a broad edging of greenish white, which Mr H. J. Veitch stated would come quite white as the flower aged. Messrs Veitch & Sons also had a new *Cypripedium*, named *pardinum*, but in the way of *C. venustum*, and as shown not exhibiting any marked excellence; also *Loelia anceps Dawsoni*, with white flowers, having a rich purple lip, and a pale rose-coloured form of their new hybrid *Phaius irroratus*, named *roseus*, raised from *Phaius Wallichiana* crossed with *Calanthe vestita*. Messrs E. G. Henderson & Son contributed a very interesting group of variegated Ivies, to one of which—*Hedera rhomboidea obovata*—a first-class certificate was awarded. Though the plant and leaves were both very small, it appeared to have much distinctness of character, the leaves being of a bronzy-purple tint. A good fine-leaved form was *H. Algeriensis*, the leaves large and bold, and it had a robust look about it, but was said to be somewhat tender. The attention bestowed on these Ivies by Mr Shirley Hibberd, Dr Seemann, and others, appears to be bringing them to the fore, and they certainly deserve the attention aroused. The following was also good: *H. Algeriensis arborescens*, with fine bold dark-green leaves. In some of the variegated kinds the differences appeared to be very slight indeed.

In the way of hardy ornamental plants, a notice of the gold and silver Spruce Firs exhibited by Messrs J. & C. Lee must not be omitted, especially the golden variety, which has an elegant and attractive appearance at this season of the year.

R. D.



AMATEUR CULTIVATION OF THE HOLLYHOCK.

AND now, by way of supplementing the remarks I have previously made on the cultivation of the Hollyhock, I have to speak of it as a valuable floral agent in the decoration of shrubbery-borders. Let me describe how I myself use it as a decorative plant. I have a shrub-

bery-border planted principally with Laurels, and in front some nice bushes of *Berberis aquifolium*, which face the flower-beds in the large grass-plot here. It is 126 feet in length and 5 feet in width, and I plant it as a ribbon-border in the following manner: At the back Hollyhocks planted 4 feet apart, the colour arranged so as to secure the best effect when seen from any part of the garden. In front of the Hollyhocks a line of the yellow blooming *Calceolaria viscosissima*; then a line of Tom Thumb Scarlet *Pelargonium*; then a row of Purple King *Verbena*, and an edging of *Cerastium tomentosum*. As this border is of semicircular shape, it is not too much to say that I secure a kind of enduring floral rainbow; and the effect is extremely good, and the arrangement praised by all who have seen it. I have also here two very large circular beds, and the centre of each of these I fill with Hollyhocks, selecting and arranging the colours. These I plant the first week in March, using old plants that were potted up in the autumn. By putting the strongest plants in the centre of the bed, I get the tallest spikes there; and I allow each plant to carry three of the strongest shoots, which reach a height of from 6 to 7 feet. Round these I place a band of weaker plants, which grow about 5 feet. Each of these also carries three shoots. As soon as the shoots are 1 foot in height, they are secured to a stake about 2 feet out of the ground when firmly driven into it; and this I find quite tall enough to keep the plants from being injured by the wind, and the stakes do not show themselves amid the flower-spikes. In one of the beds I place round the Hollyhocks Crystal Palace Scarlet Bedding Dahlia, and for an edging the Purple Zelinda Bedding Dahlia, which being of rather dwarfer growth, makes a good edging, as well as affords a good contrast to the former. In the other bed I plant bedding Dahlia Alba multiflora instead of the Crystal Palace Scarlet, and edge as before with the Purple Zelinda. I cannot dispense with the last named, as, while it is singularly free of bloom, it gives a fine crimson-purple hue, much needed in the flower-garden. I have an impression that in small gardens even single plants of the Hollyhock placed here and there can be introduced with good effect. They serve to relieve the frequent flat appearance of these gardens, and they remain in bloom a considerable time.

Last summer I received an invitation from a brother amateur Hollyhock cultivator to call on him and see his Hollyhocks. These he had planted in a single row, and they were from 6 to 7 feet in height, with noble spikes of bloom, each plant having a single stem; and being of various hues of colour, they had been planted so as to secure as much harmony of colours as possible. In front of the Hollyhocks were two rows of the finest hybrids of *Gladiolus Ganda-*

vensis, with a line of dwarf bedding plants in front; then a line of *Calceolaria aurea floribunda*, and an outer edging of *Alyssum saxatile variegatum* planted close to the box. I was very much pleased with the fine effect of this arrangement, and made a note of the composition of the border at the time as well worthy of being recorded.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



SOMETHING ABOUT THE PANSY.

THE cultivation of the Pansy has occupied the attention of florists for a considerable number of years; and, comparing the varieties now cultivated with those found in our gardens twenty years ago, the giant stride made in its improvement will be at once admitted. Some years ago this favourite flower was grown more extensively than at the present time. There are various reasons for the falling off in this respect, the principal one being a desire for bright and decided colours in plants used in the decoration of the flower-garden, consequent upon the style of bedding or massing so much in repute at the present time. It is gratifying to know that the Pansy is again being sought after, and used as a decorative plant in some of the best gardens in the kingdom; and I am confident that, if as much attention were paid to its particular acquirements as there is to bedding-plants in general, it would outstrip the majority of them in the duration and profusion of its blooms. The Pansy is *par excellence* the plant for small gardens, and especially with amateurs with limited means at their disposal for wintering half-hardy plants. Few plants produce a greater number of flowers on the same area of foliage; it is very hardy; a large number can be wintered in a small compass; it is easily propagated, and it is amongst the first flowers to cheer us in the early spring months, and the last to leave us in the late autumn.

For the benefit of those readers of the 'Gardener' who might wish to give the Pansy a trial in the flower-garden, I beg to subjoin a few cultural notes, and if I induce them to become cultivators of my favourite, I shall consider myself more than repaid for my trouble. In reference to its propagation, this may be done at any time from March till December; but the cuttings to form the principal stock should be put in the last week of September or the first week of October. At this time of the year, if the plants have been grown in suitable soil, and been duly attended to the previous summer, there will be found springing from around the root of each plant a number of little shoots from 1 to 3 inches long—these make the best cuttings;

many of them will be found to have little roots springing from their base, and should be planted apart from the others, as they will get on faster in consequence, and bloom earlier than those destitute of such roots. With a sharp knife trim a few of the under leaves off each cutting, and insert them in lines 6 inches apart, and 3 inches from cutting to cutting in the lines. As the work proceeds, press the soil closely about each line ; and should bright sun occur, give a slight shading for six or eight days—but shade is seldom necessary at this season of the year. For the cutting-bed choose a sheltered spot with a western aspect ; its size must depend on the number of cuttings to be put in, and should be made as follows : upon the surface of the soil place on their edges parallel to each other two boards, about 7 inches in width and 4 feet apart ; fasten them by nailing them to two wooden pins previously driven into the ground, and place a board across at the ends, and fill up the enclosed space, first with 3 inches of coal cinders to act as drainage, the remaining 4 inches with a compost of two parts good garden-soil, one part wood charcoal, burned earth, or charred rubbish of some kind pounded moderately fine, and one part sharp sand, thoroughly mixed ; press this mixture firmly, and make smooth the surface of the bed ; it is then in readiness to receive the cuttings. When hard weather sets in, as a protection against cutting winds nail Spruce or other evergreen branches to the boards surrounding the bed ; let their tops meet over the plants, but be careful not to place them so close as to materially exclude the light.

The beds in which Pansies are to bloom should be trenched and turned over at least twice during the winter. At the second turning spread from 4 to 6 inches of well-rotted manure over the surface, and as the turning proceeds let it be properly mixed with the soil.

The end of April or beginning of May is the best time to remove the plants to their blooming quarters ; many of them will be in bloom, and at once give some return for the care bestowed upon them. Plant rather deep, and if the soil is in good working order, press it firmly round each plant. The state of the weather will regulate the amount of water necessary, and this must be left to the judgment of the cultivator.

The first week in June mulch the beds with old manure passed through a coarse sieve ; give a good watering, which must be repeated as often as necessary : remembering that a mere surface sprinkling is worse than useless, therefore give a liberal supply on each occasion. Look over the beds occasionally, and pick off the seed-pods ; stop any shoot that is unduly taking the lead ; and should a plant appear unhealthy, remove it at once, and fill its place with one from the reserve bed. So far as propagation, soil, &c., are concerned, the above remarks

will apply to Pansies grown for exhibition ; but when the latter is the aim of the grower, he must keep up a succession of young plants, as they invariably produce finer blooms, both in point of colour, size, and shape, than older plants. Thin the flowers on weak-growing kinds, and during a fortnight previous to the show, shade from bright sunshine and protect from heavy rains, as the least spot of dirt, blotch, or blemish on any of the flowers will tell against a stand when placed on the exhibition table. For effect in the flower-garden, the self-coloured Pansies are best ; the yellows, whites, dark-purples, and blues are as effective when used in masses as most of our half-hardy bedding plants, and when treated as directed above seldom fail to give satisfaction.

J. H.

[Those of our readers who dwell in the south of England, and who cultivate Pansies in the open ground for exhibition, should plant their beds much earlier than the time named by our correspondent. It should be done in October and November, or else in February or March. Generally, in the drier districts of the south, they are cultivated in pots, a practice rendered almost if not absolutely necessary by the frequent prevalence of dry hot weather at the end of the spring or early part of the summer. Very shortly we hope to give an outline of the cultural process of one of the most successful amateur cultivators and exhibitors in the south of England.—Eds.]



A CHAPTER ON AMATEURS FOR AMATEURS.

YOUR true amateur, in things horticultural, is the representative of a class of persons to whom the pages of the 'Gardener' ought to become subjects of deep interest, and full of matter of the most useful character. Perhaps too much of the matter in its columns has hitherto been devoted to the teaching of that portion of its readers who least require it—I mean, the professional gardeners, many of whom are, perhaps, as well able to treat of things horticultural as are their teachers. I have sometimes noticed a tendency, on the part of many writers in gardening papers, to forget that the gardeners of the nation whom they are addressing are in many cases as well informed as themselves, and generally disposed to somewhat resent the almost dictatorial style in which professional articles are frequently indited. Men who have grown grey in the service of horticulture do not relish information, however valuable, if so conveyed ; and are far more likely to appreciate that spirit in the teacher which seems to say, "Come now, and let us reason together," rather than that which jumps too quickly at conclusions, and sets up in spirit infallible dogmas of horticultural faith in regard to matters about which their readers may widely differ.

But our amateur is a totally different person. He places emphatic

reliance on all that falls from the pen of a professional man. He gazes with wonder and admiration when shown what the professional capacity has accomplished, and treasures up every word uttered by men qualified to speak; and, if possessing moderate capacity, will soon show how he appreciates the advice given. Our amateur has no bounds to his horticultural ambition other than his pocket. He is, however, generally wise enough not to have too many irons in the fire at one time, so he devotes himself sometimes to one special thing and sometimes to several, with varying success. The amateur cultivator of the *Pelargonium* is largely represented. They soon get posted up in the special knowledge requisite to grow a *Pelargonium* well; and if cuttings cannot sometimes be begged, plants must be and are bought, and frequently successfully grown. If there is a flower-show held in his locality, he will be there in great force, and will display in his love of plants how beneficent are the influences that horticultural societies can exert, if rightly conducted. I can also particularise the amateur grower of the *Auricula* and *Polyanthus*. He is sure to be a very enthusiast in his pursuit, and will freely spend his money to gain coveted varieties. Strangely enough, the cultivator of these fine old flowers rarely troubles himself about any other plants, unless it be a few Pansies or Tulips; but his devotion to the flowers of his choice leads him to do them well—so well, indeed, as often to out-pace the professional grower.

Working in a somewhat more extensive sphere is found the amateur fruit-cultivator, for he either rejoices in a goodly-sized garden, or has his bit of glass, under which he grows a few Vines, and possibly a Peach-tree or two, and as many Plums or Pears, &c. His experiences are not always pleasurable, for he finds that mildew will appear and thrip will thrive, and he is driven to his wit's end to find a means of ridding himself of them. He will call on you, and ask you to look in and see his house, and not only tell him but show him what to do, for you told him before, and he did it, but it was of no avail. Perhaps he did it wrongly, so you must show him how to do it rightly, that he do not fail in the future. If you walk into his parlour, you will see lying prominent upon his table, and well-thumbed, Thomson on the Vine, and Rivers's 'Orchard-House' and 'Miniature Fruit-Garden.' The contents of these he has well digested, but he will tell you, with apparent sincerity, that after all he requires practical knowledge to apply his information. Fortunately, our fruit-amateur is not a despairing being. He is not daunted by a failure or two. He comforts himself with the assurance that experience, to be worth anything, must be bought, and so he goes to work again with renewed energies, and is ultimately successful. I dare not forget the amateur Rose-cultivator, but I touch

upon him with diffidence, for visions rise up before me of great men—not only mentally but physically great—who, clothed in broadcloth and linen of spotless purity, have made themselves kings and princes amongst amateur cultivators in the great modern Wars of the Roses. Our Queen of Flowers must have no common men for her chief ministers, although all may bask in the sunshine of her sweet smiles; and thus it is that, at the present time especially, our Rose-amateur stands far above the range of other amateur growers in the position he holds in horticultural society. The amateur vegetable-grower may be said to dwell in a lower world. The labour he has to undergo in the pursuit of his special pleasure would scare a man made of tenderer stuff, for vegetables must have exercised over them much physical toil—indeed, the success the amateur meets with will usually prove the best test of the toil he has bestowed on the production of his crops. At one time he will astonish you with the size and shape of his Onions; at another, with the fine quality of his Potatoes (for this noble esculent he exhibits, and rightly too, a special pride); and then, later on, he will show you such Celery, so white and crisp, and withal so delicately flavoured, that you can hear him chuckle as he puts it to you whether you can beat it?

These are, however, but a small selection of types from out our great army of amateur cultivators—thanks to the spread of horticultural information through the medium of the press. A love of that beautiful science is fast permeating all classes of the community, and not least in importance are the results to be found amidst the suburban denizens of our great towns, whose occupations, whether professional or otherwise, are usually of a sedentary character, and who, therefore, find in their gardens the purest and healthiest recreation, combined with a profitable bestowal of labour. This class furnishes what might be termed the general amateur, for he dabbles a little in most things that appertain to a garden. It is to this body I intend, as occasion serves, to offer some information suited to their special circumstances. Living, as I do, in the suburbs of a large town, and being myself to a great extent one of this class, I hope not only to instruct others, but, in the act of doing so, to be myself taught, and so each and all be benefited by the action.

SOUTHRON.



HOW I RAISE MY PELARGONIUMS FROM SEED.

I THINK the details of my plan likely to be interesting to any one, who, like myself, is fond of raising Pelargoniums from seed ; and those who have not yet attempted to do so may be led to try the experiment from a perusal of the rules of the simple but sure way by which I get a nice lot of young plants from good seed. I find that if the raiser selects his seed from some good varieties, he may reasonably expect some good things, and possibly a few real novelties ; but be sure that it does come from good varieties, and that the seed is fully ripened. If you have no plants from which to get seed good enough for your purpose, you can hardly fail to obtain some from your nurseryman.

Now for the mode in which I sow my seed. I take some 48-sized pots, and put in them a few crocks, and a few rough lumps of turfy loam for drainage, then a few smaller pieces by which to fill up the pots to within 3 inches of the rim : then for a suitable soil in which to place the seeds, I mix together a little loam, leaf-mould, and silver-sand, and either finally pulverise it with the hands, or sift it through a fine riddle. I then fill up the pots with this mixture to within half an inch of the rim, and give them a rap or two on the potting bench to settle the soil ; then I add a thin layer of silver-sand, and slightly water the pots through a very fine rose watering-pot ; then sprinkle a little more sand on whilst the soil is moist, and allow them to stand two or three hours ere I sow. Meanwhile I select the seeds to be sown, and these I pick out separately and lay them on a piece of paper ready to hand, so that they can be picked up singly. Now I take a small stick about the size of a penholder, pointed at one end, and in the soil I make small holes about half an inch in depth, beginning with a circle about half an inch from the rim of the pot, and so add circles till the space is covered with them. Those who grow Pelargoniums know well that the seeds have each a kind of minute silvery feather at one end of them. I take each seed by this feature and place it in an upright position in the hole, holding the feathery part in the hand as in the act of planting cuttings, and allowing it to project from the soil. Each pot of the size named takes about forty seeds, and when all are planted the soil is settled about the seeds by a slight sprinkle from the watering-pot. Now each pot looks as if I had stuck a lot of very small feathers in the sand instead of seeds. I place the pots on a shelf in the greenhouse, and in about a fortnight's time I can perceive rising up from the base of the little silvery feather the tiniest green leaves. The leafage is very pretty indeed at this stage, and it is extremely interesting to watch their development, as some have pale golden leaves, some light-green, and some dark-green

leaves, with a distinct dark zone traced on them. I have, at the time I write, several pots of seedlings presenting a singular variation of leaf-marking.

I find it very necessary to guard against the attacks of mice. They have decided floral tastes, as I have discovered to my cost; they are extremely fond of devouring the seeds, and with them the chances of obtaining either plants or novelties.

Now for my experiences with seeds taken from certain varieties. I planted one pot with seeds obtained from Amy Hogg, one of Mr W. Paul's Nosegays; and, as far as I can judge of the appearance of the leaves at present, they show at least four distinct types. From Forget-me-not, a pretty and useful pink-blooming zonal, I have some plants having dark-green leaves with a dark zone like the parent, and some leaves with a pure golden surface. From Mons. Reudatler some fine zonal leaves may be expected, even if the flowers are worthless. In the early part of the summer of 1869 I planted out in the margin of a vine-border two rows of seedlings of my own raising, and in several instances the decided character of the leaf-marking was of a very interesting character; and some of the plants produced really good flowers. From these I selected several kinds that promise to make good bedders, and I shall propagate them for the purpose, and so thoroughly test their properties and bedding qualities.

Supposing I get no decided novelties, I would on no account miss the enjoyment that the raising of seedlings always affords. It is deeply interesting to watch the opening flowers, and to note how they vary in character from the parent type, alike in the shape and colour of the blossoms, and in the shape and marking of the leaves.

I have now to add that I sow the seed in August or the first week in September.

GEORGE VENNER.

THE GROVE GARDENS, HAMVELL, W.



THE PLUM GROWN AS A PYRAMID.

I HAVE read on page 8 of the last number of the 'Gardener' an article on "The Cultivation of Hardy Fruits," by Mr M'Millan, in which he particularly treats of the Plum. In that article the following passage occurs—"I have never tried the Plum as a pyramid, nor have I ever seen it as such. From its general appearance and habit, and the mode of pruning and training necessary, it is my opinion that, grown as pyramids, it would not succeed. I may be wrong, but my idea is, that as such it would be far more likely to make such growth as would result in the production of wood in the place of flower-buds."

I write for the purpose of narrating, not what I have myself done with the Plum as a pyramid, but what I have seen others doing; and I can draw a notable illus-

tration of the cultivation of the Plum in this manner from what has been and is still being done with the Plum as a pyramid at the Gardens of the Royal Horticultural Society at Chiswick.

When there a few days ago, Mr A. F. Barron, the able superintendent at Chiswick, showed me a long border of pyramid Plum-trees, about two hundred in number, and comprising a full collection of the various sorts in cultivation. These trees have been planted about ten years, and average some 7 feet in height. In forming these trees into pyramids, such a number of sorts would be sure to betray marked diversities of growth ; and while some could be trained to the pyramid form more readily than others, there was not a single one of the many varieties under cultivation incapable of being so trained. Some make but a spare bushy growth, others throw out clusters of fruiting-spurs that were now densely covered with blooming buds. Mr Barron is of opinion that the Plum can be cultivated in the form of a pyramid as well as any other fruit. What is mainly required is great perseverance on the part of the cultivator in the summer-pinching of the shoots, so as to insure the production of fruit as opposed to a rampant growth of mere wood.

It has been stated that Mr Rivers of Sawbridgeworth plants out pyramid Plums by the thousand, the plants being about 3 feet apart ; and some good fruit-cultivators are of opinion that if pyramid Plums about 4 to 5 feet in height were planted out in rows, some 3 feet apart, and 2 feet from each other in the row, it would be an excellent method of growing Plums, and well repay the outlay incurred.

OBSERVER.



HORTICULTURAL EXHIBITIONS.

THE meetings of the Royal Horticultural Society are practically exhibitions, as they always produce something worth looking at. The December meeting, though held only four days before Christmas, and with the shadows of the coming hard wintry weather thrown over it, yet had its quota of interesting objects. A large group of garden Ivies, exhibited by Messrs E. G. Henderson & Son, in groups of three plants in pots of each kind, was thoroughly well examined, though many of the plants were in bad condition. There is such a perennial never-failing value about these plants that they scarcely ever look dull or cease to do effective service. For covering low dead walls, the exteriors of glass structures, and in many other ways, they can be turned to such excellent account that we cannot wonder at their growing popularity. Messrs Henderson's collection included some supposed newly-imported species, the value of which will have to be determined when they become more developed. A very nice group of winter-blooming Orchids, exhibited by Messrs Veitch & Sons, went far to show their value for house-decoration at this season of the year. They included *Masdevallia Veitchii*, with one very fine flower ; *Vanda insignis*, very handsome ; *Oncidium Phalaenopsis*, prettily flowered and very charming ; and a few others quite as beautiful. At the nurseries of Mr William Bull, at Chelsea, can now be seen in bloom, in an intermediate house, a very interesting collection of winter-blooming Orchids, of which we shall give some account very shortly. Of winter-blooming flowers what can compare with the *Cyclamen Persicum* ? At this meeting two groups of plants were furnished, one by Mr Edmunds of Hayes, the other by Mr Welch, Parkfield House, Hillingdon ; and those best acquainted with the *Cyclamen*, and the high state of

development to which it has been brought, were struck with the marked beauty of some of the flowers in these collections. Thanks to Mr Wiggins and others, not only is the treatment of the Cyclamen better understood, but it has also become much more widely grown, and better done in consequence. Mr George, gardener to C. H. Maxwell, Esq., Caversham, was awarded a special certificate for an example of *Calanthe vestita*, with a marvellously fine spike of flowers; and those veteran nurserymen, Messrs J. & C. Lee of Hammersmith, had a very interesting collection of handsome hardy shrubs grown in tubs.

In the way of new fruits, Mr Crament, gardener to E. Backhouse, Esq., Sunderland, exhibited a seedling Grape, in appearance not unlike the white Tokay, a long well-shapen bunch, but not ripe, as all flavour had departed, supposing it had ever possessed any. From Mr Thomson of Dalkeith came a bunch of his new white Lady Downes Grape, in appearance all that could be desired in a Grape, but with its flavour so undeveloped that it was requested to be shown again in March next. Mr Tillery of Welbeck sent, among a nice collection of Apples and Pears, a seedling Pear said to have been raised from the Chaumontel crossed with Gansels' Bergamot, but it did appear to differ from the Chaumontel. Perhaps some of the finest Chaumontel Pears ever seen grown in the London district were produced on this occasion. They were shown by Mr Hepper, gardener to J. H. Walmisley, Esq., the Elms, Acton, Middlesex, and a special certificate was awarded to them. A good kitchen Apple, under the name of Farmer's Seedling, came from Mrs B. Ord, Whitfield Hall, Cumberland. It has the appearance of being a sort well worthy cultivation. At this meeting two prizes were given by the Rev. George Kemp, one of the members of the Fruit Committee—one, value £3, for the best, and one, value £2, for the second best, winter dessert of Apples and Pears, three dishes of each. There were several competitors, and, the season considered, the fruit was generally good. The best came from Mr Garland, gardener to Sir T. D. Acland, Bt., Killerton, Devon, who had Golden Pippin, Nonpareil, and Ross Nonpareil Apples; and the following Pears, Winter Nelis, Glout Morceau, and Bergamotte Esperen. The second best came from Mr S. Ford, gardener to W. E. Hubbard, Esq., St Leonards, who had Ribston Pippin, Blenheim Pippin, and Red Pearmain Apples and Knight's Monarch very fine; Duchesse d'Angoulême and Josephine de Malines Pears. Messrs Tillery; W. Early, Digswell; and Gilbert, Burghley Park, also exhibited, so there was no lack of interest in the competition. After all, the best-flavoured Apple among all those exhibited on this occasion was Cox's Orange Pippin, from Mr F. N. Dancer, Turnham Green.



GARDEN RECORDS.

NO. II.

BATTERSEA PARK, LONDON, S. W.

(Continued from p. 35.)

RESUMING our "Records" at this point, we note that a tall weeping Ash, with a golden-leaved Japanese Honeysuckle trained round the stem, afforded an opportunity for the planting of a circle of the double-flowering Pelargonium, Triomphe de Gergovat, but one apparently worthless for bedding purposes. Round this was a line of Mann's brilliant scarlet zonal Lord Derby, with small trusses of bloom

as usual, but the flowers of a fine hue, and, as when cultivated in pots, of the finest form; and round this a capital gold and bronze Pelargonium Mr Gibson intends to try again, so much was he pleased with it, it being dwarf in habit and very effective. Near this was an oval-shaped bed, having in the centre *Vitis heterophylla variegata*, the leaves nicely edged and blotched with silver. Round this was a line of *Lonicera aureo-reticulata*, nicely coloured, and therefore a good contrast, edged with *Teleianthera* (*Alternanthera*) *versicolor*, here an exquisite edging plant, the dark bronze and bright red leaves blotched with white; but it must be borne in mind that the enclosed subtropical garden at Battersea Park is highly favourable to the wellbeing of tender bedding plants, that altogether fail in exposed and wet situations. The next bed was of a long oval shape, facing towards the walk, having at the back three lines of variegated zonal Pelargonium Mrs Pollock, Louisa Smith in the centre, and Lady Cullum in front. Between each of these sections of variegated zonal Pelargoniums was a line of a so-called dwarf Ageratum named Prince Arthur, but much too tall-growing for such an arrangement, as it buried the Pelargoniums. Mr Gibson remarked that a dwarf-growing blue Ageratum was much needed in the flower-garden, and this has no doubt been found in Ageratum Imperial dwarf, to the admirable qualities of which Mr Plester calls attention on another page. Lady Cullum was very fine and effective in this relation, and bids fair to take the lead as a bedder among the variegated zonal Pelargoniums. Close by this bed was another of circular shape, almost wholly filled with Crystal Palace Gem, one of the golden-leaved section of bedding Pelargoniums, in praise of which too much can scarcely be written. Then came one of those beds so peculiar to Battersea Park, and so unusual elsewhere—namely, one of circular shape, filled with various forms of the Erythrina. In the centre was a disc of the old *E. crista-galli*; round this, *E. Madame Belanger*; encircling this, in its turn, was *E. ornata*, very fine indeed; then, on the outside, *Madame Belanger* appeared again, a very fine dark form that deserves to be more frequently seen in gardens; then a circle of *Heliotrope Miss Nightingale*, and a margin of *Sempervivum barbatum* bearing yellow flowers. The Continental horticulturists have certainly done much of late years in the way of improving the Erythrina, for there are now several fine and varied kinds well worthy attention. Still another circular bed, having in the centre *Gaiety*, bedding Pelargonium; round this was *Beauty of Calderdale*, one of Wills's gold and bronze Pelargoniums, quite dull-looking, and had been so all the summer. To quote Mr Gibson's expression, "It had not behaved well with him." Round this was blue *Lobelia*, next Wills's new golden *Christine* bedding Pelargonium, a nice edging plant, but of a rather "miffy" habit; round this *Alternanthera paronychioides*, and an outside edging of *Echeveria secunda glauca*. These two outer circles composed what may be truly denominated "a perfect edging." Now came in view a raised side-border edged with *Viola lutea grandiflora*, a grand yellow summer bedding plant, which as far transcends the ordinary form of *V. lutea*, both in the size of the flowers and effectiveness, as the new *V. Perfection* does the old *V. cornuta*. Bedders-out, who find the yellow *Calceolaria* unmanageable, and who are sighing for yellow bedding plants, should keep their eye on this; and some large-flowering forms of *V. lutea*, report states, will shortly be offered. Here came into view a central mass of the old Honeyflower, *Melianthus major*, a tender evergreen plant, requiring shelter during winter, and having a kind of silvery sheen spread over its leaves.

Some of the new golden-leaved Coleuses were bedded out here and there, and though we could not become highly enamoured of what we saw of their adaptability for bedding purposes, yet Mr Gibson said he was not disposed to give up

their use without another trial. He states that they want growing in the shade to bring out their peculiar leaf-hues. Next came some bold and striking groups of *Yuccas*, indispensable to the subtropical department, like the shading that, by an almost perfect contrast, brings out clear and distinct the exquisite colouring of some great master painter. *Yucca aloifolia* plays an important part in Mr Gibson's groups. *Canna discolor floribunda* deserves to be recorded as one of the very best of the dark-leaved kinds; there was a group of it with leaves so beautiful, bronzy, and glossy, as to strike the eye at once; it was edged with the double white *Balsam*. Then came an irregular triangular-shaped bed, having a centre of several plants of the grand *Musa Ensete*; round this was *Coleus Batemanni*, good as a dark-leaved kind, and stands well; then *Coleus Verschaffelti marmoratus*, which had been very fine and effective indeed, though with the cool damp nights the "glory was departing;" the edging, *Sempervivum Californicum*. *Solanum Warscwiczioides* should be noted as a fine-foliaged plant for such work as we are now describing. Now came a fine bed of triangular shape, having three *Musas* in the centre; under and around them was a kind of carpet of *Coleus Blumei* and *C. Lamonti*, the last named of the *Blumei* type, but a little greener in the leaf, and edged with *Sempervivum Californicum*. These *Coleuses* are of good service in the summer, but are scarcely adapted for late work, as they come too green in the leaf then. Zonal *Pelargonium Leonidas* was very fine in the centre of a circular bed, the flowers of a rich deep glowing scarlet hue, the trusses of bloom small, but the individual pips of great size. On the other hand, hybrid Nosegay *Pelargonium Christine Nillson*, with deep-pink flowers, may be justly condemned as of no use. It is well, in treating of bedding plants, to intimate what to avoid, as well as what to specially select. Gold and bronze *Pelargonium Artemus Ward* had been good early in the season, but failed as the advancing shadows of autumn threw their dark lines over the scene; the leaves came blotched with green and gold when in good condition, and had a lively chocolate zone. A perfect bed was one of oval shape, having in the centre a large mass of *Coleus Verschaffelti*; round this *Centaurea candidissima*, and an edging of *Sempervivum Californicum*. No more need be said in praise of the arrangement. In a serpentine bed, the groundwork formed of winding circles of Ivy, was seen zonal *Pelargonium Lucius*, one of Bull's fine varieties, and having fine showy crimson flowers and large erect and bold trusses; this was edged with *Pelargonium Golden Fleece* and a margin of *Euonymus radicans variegata*. At the back of this bed, in place of *Lucius*, was Nosegay Lady Constance Grosvenor; but Mr Gibson intends to abandon the growth of it, on the ground that it blooms too late. Next came a circular bed arranged with much novelty of design. In the centre of the bed was a disc of *Ageratum Prince Arthur*; from the centre of the bed to the circumference ran out four ray-like bands, each of which was planted with one of the following variegated Zonal *Pelargoniums*; viz., *Sophia Dumaresque*, good; *Star of India*, very like it in character; *Sunray*, a variety that does not do well out of doors; and *Louisa Smith*, also in bad condition. Between each of these bands was an angular-shaped space, and these were filled with the following gold and bronze *Pelargoniums*, one variety in each; viz., *Mrs C. Barry*, *Bronze Belt*, *Kentish Hero*, and *Beauty of Calderdale*; of these, the two last named were decidedly the best.

The 'Gardeners' Chronicle' shall supply the remainder of our notes:—

"Foremost in novelty and attractiveness are certain low beds carpeted with distinctly-coloured foliage. In one most strikingly beautiful bed, 30 feet long by 6 feet wide, we have three rectangular masses of the golden-leaved *Pyrethrum*, which are bordered and connected by a broadish band of the rosy-tinted *Alter-*


nanthera amoena, the outer mass being made up of the orange-tinted *Alternanthera paronychioides major*. The effect is excellent, and equally pleasing whether seen from a distance or examined closely. Another contiguous bed is filled with the same kinds of plants, but differently arranged. Here there are two diamond-shaped masses of *Alternanthera paronychioides major*, bordered and connected by a broad band of *Alternanthera amoena*, which in addition is made to form a cross band at the centre and a Trefoil figure at each end, the whole outer mass being the golden-leaved *Pyrethrum*, edged with a line of *Echeveria secunda*. In another part of the grounds occur a pair of elongated carpeted beds, consisting of a series of circles of the silvery *Antennaria tomentosa*, *Alternanthera amoena* and *Teleianthera versicolor* being disposed in a scroll-like band around them, while the outer part is filled with *Alternanthera paronychioides*, with a most effective border formed of a single line of *Echeveria secunda*, which latter, with *Sempervivum Californicum*, and one or two other succulents of similar character, appear frequently in similar positions. These carpet beds are all gems in their way.

“Another remarkably effective spot, and one to which Mr Gibson has this year made considerable additions, is what he designates most appositely as *Alpine Point*. The ground is thrown up in imitation of mountain scenery, and two ‘snowy’ peaks covered with the white-leaved *Antennaria* are seen peeping up above the surrounding scenery from many distant points. The lower surface is clothed with hardy succulents and herbaceous plants of dwarf habit, the intention being to get the ground covered with a carpeting of close-growing perennials—such, for example, as the dwarf *Sedums*—and then to throw out here and there individuals or masses presenting characteristic features.

“In another style of grouping was a cone-shaped bed planted on the crown with about a quarter of a hundred fine plants of *Echeveria metallica*. The miniature mount was broken up into half-a-dozen spurs, on each of which was placed a plant of the green-leaved *Sempervivum Donkelaari*, and at the point a group of five plants of the white-leaved *Pachyphyton bracteosum*. In each of the hollows between these prominences was placed a small plant of the variegated-leaved *Pine-Apple*. The whole surface was clothed with *Sedum glaucum*. This bed was a very telling one.

“A quiet sheltered nook, which for the past year or two has been given up to the Ferns, has been considerably amplified and improved. Here are to be seen a few specimens, with considerable trunks, of *Dicksonia*, *Cyathea*, &c., with an undergrowth of *Thamnopteris Australasica*, the palm-habited *Dracæna nutans*, on tall stems, being very effectively introduced. It is a most charming, retired, and quiet spot; and near at hand Mr Gibson has opened up a vista in the belt of shrubbery which, with its furniture of *Anthuriums*, *Aralias*, and other handsome-leaved plants, forms a feature of much interest, and capable of further development.”

Mr Gibson is a true artist, and his genius is as inventive as it is strikingly apparent. The general effects could not fail to call forth the warmest commendations. The great charm of these effects consists in this, “that they are not suffered to appear in the same stereotyped form each recurring year, but being modified by a delicate touch here or a bold stroke there—both the work of a master hand, and thus are ever presenting signs of progressive refinement.”



THE EDUCATION OF GARDENERS.

Let us see what "One in despair" puts forth to show that education is of little benefit to a gardener.

1. He served his apprenticeship at a nobleman's place, where there were twenty men employed.

2. Went to another large place, where he paid 3s. per week to the head-gardener, but learned nothing from him.

3. Was five years head-gardener, with three men under him, and left owing to a quarrel with one of the other servants.

4. Took a single-handed place for his own convenience, was discharged with other servants without warning or character, but from no fault of his own.

5. Having been some time out of work, went into the nurseries.

6. Got a recommendation to a good place, where he was five years, and where, but for his own fault, he might have been now.

7. Dropped down to a working gardener at 20s. per week.

Verdict on the above: This man sank in spite of his education, with more opportunities to rise than fall to the lot of one gardener out of a hundred.

Let the young gardener, who with much trouble has educated himself, gather from this statement that if ready to adapt himself to the natural incidences of his position, whether pleasant or otherwise, he will not want opportunities to rise.

DOWN SOUTH.



ON THE CONSTRUCTION OF FRAMES.

KINDLY allow me a few lines in reply to your correspondents, A.M.A. and Adam Renton, with respect to the building of their frames, the former with gas-tar the latter with gas-lime. For my own part, I do not see any analogy between the two cases, owing to the very great difference in the composition of the materials used. Gas-tar contains a large quantity of naphtha, and it is doubtless this ingredient which makes it dangerous to the life of plants, especially when the frame is warmed by artificial heat, and kept closed. We have all experienced the disagreeable smell rising from walks made of ashes and gas-tar when the heat of the summer affects them, while in cold weather no such smell is emitted. Gas-lime is composed principally of lime, in which is absorbed sulphurette, hydrogen and carbonic acid gases; and this compound being in a moist state, certain quantity of ammonia is mechanically held by it. This latter compound is a great fertiliser, and the agreeable softness of rain-water is due to the presence of the alkali. The "pungency" of gas-lime is doubtless owing to the presence of the gas; for when newly prepared and carefully applied it is found very destructive to wire-worms, slugs, earth-worms, &c., its caustic properties dissolving, to speak, their tender skin.

On the application of a gentle heat, the ammonia is drawn away from the gas-lime, so that there is left the sulphuret and carbonate of lime, neither of which when used in the composition of mortar, could do any harm. Gas-lime, when laid up with loam for a few months, makes a first-rate dressing for lawns, &c., imparting to them a rich green appearance. A few years ago this mixture was applied to a cricket-ground in my neighbourhood, and throughout the season there was a grand herbage on it, the sheep being particularly fond of the feed produced.

AN AMATEUR CHEMIST AND GARDENER. —

ON WINDOW PLANTS AND THEIR CULTURE.

So extended has now become the cultivation of window plants, either as grown within the glass in pots, or without the window in boxes, that attempts in this direction can be seen on every hand by any one who may take a casual walk through any district of London ; and numerous illustrations are furnished, from the window *jardinet* of the aristocratic mansion in Grosvenor Square, down to the *creeping jenny* or some such humble floral ministrant that occupies the sill of the second and third floor windows of a dingy-looking house in a narrow street of the Seven Dials. In this way, "one touch of nature" does indeed "make the whole world akin," for the same love for flowers creates the effect in both cases. I always link with the appearance of flowers in the windows of a densely populated neighbourhood the presence within the house of some aspect of the better nature in human kind, that finds its expression in the loving, tender care bestowed on some poor stunted plant or plants, which goes far to redeem humanity from that wholesale demoralisation it is the fashion of some to be continually charging against it.

It is interesting to know that in many of the districts of London there is a growing desire to encourage exhibitions of window plants among the labouring classes as well as among the elder children of the parochial schools. A very small subscription list serves to create a number of prizes, for which there is often very keen competition ; and a schoolroom can always be made available for the purposes of the show. The value of these exhibitions, in a civilising and elevating point of view, cannot be too highly estimated, for it has been abundantly manifested that the simple tending of a few homely plants, and the feelings inspired by such an act, are invaluable in counteracting influences of a debasing character ; and have been made instrumental in elevating the home life of a family beyond the ordinary low levels of many a London dwelling.

Some of the best and most easy of culture among window plants are the common *Hydrangea*, *Fuchsia*, the *Zonale* or horseshoe-leaved, as well as the plain-leaved, the variegated, large-flowering, and scented-foliaged *Geraniums* (though it is now considered to be scientifically inaccurate to term these *Geraniums*, as they are properly *Pelargoniums*) ; the *Mesembryanthemum*, or Fig Marigold ; the well-known *Calla Æthiopica* ; the *Balsam*, the *Indiarubber* plant (*Ficus elasticus*) ; the *Myrtle*, *Petunia*, *Heliotrope* ; the old crimson *China Rose* ; some easily-grown varieties of the *Cactus* ; the yellow-flowering *Cytisus racemosus* ; some of the hardy *Ferns*, &c.,—while even simple flowers, such as the *Musk*, *Auricula*, *Polyanthus*, *Cowslip*, *Double-Daisies*, *Heartsease*, and others, can be added. The foregoing list comprises nothing but what can be obtained of any dealer in plants at a very moderate, if not even a cheap, rate.

Now, no one can expect to grow plants to perfection, or, failing this, to attain anything like moderate success, unless some care and attention are bestowed upon them. Where there is a love for plants, this necessary service is cheerfully and willingly rendered.

A few simple rules may prove very acceptable to many who are cultivating window plants in pots. 1st, It is highly necessary that, at the outset, the plants be young and healthy. Diseased and debilitated plants will bring disappointment, and the labour expended on their culture will be, to a great extent, labour lost. 2d, Plants should be properly potted—that is to say, good soil should be used—something that will supply the plant with the necessary food for its sustenance : there should also be ample drainage—pieces of broken flower-pots are

used for this purpose—and the plants should, as a rule, be firmly potted—that is, the soil should be firmly pressed about the roots. 3d, The plants should never be allowed to get dry; and, on the other hand, the soil should not be drenched too heavily. It is always best that the water given to the plants be allowed to pass freely from the bottom of the pots, and thus, to keep water standing in the saucers occupied by the plants is generally a bad practice, as it will often so sodden the roots that they will rot, and the plant become unhealthy, if it does not die outright: and 4th, Air must circulate freely among the plants if they are to be made healthy and to thrive well; therefore sash-windows are always best for flowers, as a supply of air invariably finds its way in from without, even when the sashes are closed. Plenty of light is as indispensable as plenty of air, and the undue crowding of the plants should be altogether avoided. Window-gardeners are often what may be termed “greedy” in this respect; they so crowd their windows that the inevitable result is, the plants are all badly done, whereas a few could be managed with the best possible results. The cultivation of window plants is always open to one annoyance, that of the presence on the plants of a small green insect, generally denominated the “green-fly.” When these appear, some soap-and-water should be applied, either by the use of a soft brush or by the hand, carefully washing off the fly in the act.

As window plants are generally very much exposed to the sunshine, the action of the sun will produce flagging, loss of leaves, and a decay of health if the plants are not well supplied with water. The moisture supplied to the plants must be regulated by the weather; but I have met with some window-gardeners who evidently thought, judging from their practice, that no more water was needed during a hot day in July, than in a dull close misty day in November. The old antipathy to watering plants when the sun is on them should be got rid of. If the plants can be sprinkled overhead in hot weather, so much the better; it helps to impart vigour to the plants, as well as to keep them clean. In dull wet weather it need not be done, but the leaves can be kept occasionally cleansed by using a piece of damp sponge.

These are very simple rules that can be carried out at odds and ends of time—their performance involves no labour, scarcely any expense, and but little time in the aggregate. The pleasure enjoyed as *per contra* who can estimate it—Depend upon it, plant-growing is the operation of a no mean home-influence for good, and it is one of the aims of the ‘Gardener’ to extend this influence as far as it can lend a helping hand to do so.



HOW TO GROW POT-ROSES.

MANY elaborate directions for the preparation of Roses for pot-culture are given by various authorities, but they all resolve themselves into two principles—to get *strong* plants, and to place them properly in the strongest mass of soil in a given bulk. It has been already intimated that the Rose upon its own roots is the only legitimate form for growing in pots. Let such, then, be obtained healthy and well developed, with three or four leading shoots and abundance of fibrous roots; we have next only to procure the pots and compost. Proper Rose-pots are differently shaped to the ordinary kinds; they are widish at the bottom, so as to hold the greatest possible quantity of earth. Choose them large

and clean, and then make ready your favourites' food. The best method of draining the pots is to place an oyster-shell over the hole in the bottom, and to fill up for 2 or 3 inches with knobs of charcoal and broken bones. These are much better than potsherds, inasmuch as they afford a certain amount of nutriment, as well as serving for filtering purposes. Over these should be arranged some lumps of half-rotted turf from a fat loamy pasture, well saturated with liquid manure, the remaining compost being a mixture of hearty loam, somewhat rough, and well-decomposed manure. Pot firmly, but not adhesively. It is surprising how the roots will multiply and spread in such a mixture, supplying abundant foliage above, and in due season a copious produce of well-developed blooms. The operation being completed, the plants may be consigned to a pit or the greenhouse; or, if such accessories be not at command, they may be set on a bottom of coal-ashes, and plunged in cocoa-nut refuse, with hoops placed over, so as to allow of mats being used as a protection, when necessary, from the frost; this latter operation, however, is only necessary in case of tender kinds.—*The Gardeners' Magazine*.



CAMELLIA - BUDS DROPPING.

I HAVE had under my charge for twelve months a number of sickly Camellias about 3 feet high, which drop their buds as they are about to expand. They have never been too dry since I have had them. Water was applied at a temperature of 60° during last winter, with a little weak manure-water in the spring, but there was no appearance of any improvement. I am now getting some fresh compost into the yard, not having had any before which was suitable for repotting; indeed, they did not appear to be in want of it. Can you or any of your correspondents recommend any system of culture that would render such plants again worth growing? They are kept in a vinery from March 1st to the end of June, when they are placed outside until the end of September.—A. B., STRATH TAY.

[We sent your letter to Mr Pearson, of Chilwell, an able cultivator of Camellias who kindly replies as follows:—] “If I had a lot of Camellias in the state described by your correspondent, I would get some nice turf from a good pasture, cut as thin as if it were intended to be laid down for a grass plat. I would cut such turf up by chopping it in pieces as small as nuts with a spade, and use it without any admixture, and quite fresh—unless it were from a clay or strong loam. In this case the chopped turf should be shook in a riddle to get rid of some of the soil, and the grass and grass roots mixed with as much fine white sand as will make it a sandy turf. I would then at once shake each plant free from soil, and wash its roots, removing with a knife any that were dead, and repot them in the fresh turf, in clean pots no larger in size than would comfortably contain the roots. As these unhealthy plants will require stimulating to make fresh roots, they should be kept in a warm greenhouse, not a stove, and be moistened every day with a syringe till they have made fresh roots and shoots; after which they ought to be kept in a cool house always, and never receive more heat than is necessary to prevent their roots being frozen. Of all the plants grown in our houses, none are so miserably managed as Camellias. Where, in the neighbourhood of London, can a collection of well-grown plants be seen? A plant as hardy as a Laurel, or nearly so, is forced to death at one time of the year, and exposed to every change of temperature at another. It is generally potted in a mixture

of loam and peat—one an acid soil, the other an alkaline one, which must in time produce a sour mixture. Forced in spring, dry or deluged by rain, as it may happen, in summer, exposed to the heavy dews and rains of autumn, and then treated to the dry and perhaps hot atmosphere of a vinery, is it any wonder the poor plants look miserable? Pot in sandy fresh turf; never give heat more than is required to keep out frost; keep them, if possible, in the house all the year, and if not possible, have a roof of some kind over them, to preserve them from heavy rains. When they require potting, let it be done immediately they are out of bloom. When they require watering, be sure that every particle of soil is soaked. Keep the foliage as clean as a well-washed face, and you will have no trouble to keep Camellias from dropping their buds.—*J. B. Pearson, Gardeners' Chronicle.*

REVIEWS.

THE AMATEUR GARDENER'S CALENDAR, being a Monthly Guide as to what should be avoided, as well as what should be done, in a Garden in each Month. By Mr Loudon. Revised and edited by William Robinson, F.L.S. With numerous illustrations. London: F. Warne & Co.

About this useful work there is, as the title indicates, both a positive and negative value. It is highly important to know what to do in a garden, but it is equally valuable to know what should not be done. This book gives very full and comprehensive rules for all amateur gardeners; and by means of Mr Robinson's valuable labours in revising the work, all that modern acquisitions have brought home to us is here presented in great part, either in the form of copious details or of suggestive hints. The preface states that "the directions given are chiefly adapted to the climate of the neighbourhood of London, but they are almost equally applicable in all other parts of the country, except, of course, at elevations where gardening is rarely and with difficulty practised." Amateur gardeners will find in this work one of the best books of reference they could have near them at all seasons of the year; and in addition to the mass of practical information relating directly to gardening, there is so much of incidental matter thrown in that the natural-history student especially could draw important aids from it. There are 370 pages of matter, interspersed with numerous illustrations. It is nicely bound, and altogether well got up.

THE GARDEN ORACLE for 1870. Edited by Shirley Hibberd, F.R.H.S.
London: Groombridge & Sons.

That this useful yearly issue should have reached the twelfth year of publication is about the best evidence of the way in which it is appreciated. It contains very much of that particular information at all times so useful; and in addition to carefully-prepared lists of new fruits, plants, and flowers of the year, the editor has added valuable lists of selections of plants for 1870, a feature of much value to the amateur cultivator. In a characteristic postscript at the end of the volume, but which is really an amusing preface, the editor sketches the leading features of the book, and we need scarcely say it will be read by every purchaser.

SCOTTISH ARBORICULTURAL SOCIETY PROCEEDINGS.

This gives the proceedings of the sixteenth annual general meeting of the Society, held at Edinburgh on the 3d of November 1869, the office-bearers and members, the successful competitors, with the titles of the essays, in the late competition, and a list of subjects selected to be offered for competition during 1869-70. So closely allied to horticulture are the aims and objects of this flourishing Society, that what can we do else but wish it increased success?



NEW TURFING PLANT.—The dwarf-growing *Pyrethrum Tchihatchewii* is likely to become invaluable for covering dry banks, spaces under trees, and other bare places where grass refuses to grow. It is also valuable for small forecourts, where the owner thereof has neither the inclination nor time for mowing the grass so often as is necessary to keep it neat and tidy. It is of very rapid growth, so that there is no danger of its being overgrown with weeds, although it will be necessary to diligently weed it until it has quite carpeted the earth, to preserve a neat appearance. It can be planted at any season of the year, but spring and summer are the most suitable periods. The large tufts should be divided, and the pieces dibbled in firmly at a distance of about 4 inches apart. Small plants can be planted intact at a distance of about 6 inches apart each way. I bought in two dozen plants last spring, and although they were small they were put out at a distance of about a foot apart. They now cover the entire space with a dense carpet of the richest green. If they were to be lifted and carefully divided, there would be sufficient to plant half an acre at least. It is not necessary that the soil should undergo any special preparation before planting, beyond its being dug up and the surface reduced to a proper condition for the reception of the plants. I do not recommend lawns to be planted with it in preference to grass turf, but where grass refuses to grow, or where it is desired to do away with the bother of mowing small grass-plots, there is nothing to equal it. I believe it is not yet in the hands of the trade generally in this country, but any of the leading houses would undoubtedly readily procure it through their French correspondents.—*The Gardeners' Magazine.*

CANDYTUFTS FOR WINTER DECORATION.—The value of large numbers of our common flowers is entirely lost sight of. It is not so generally known as it should be that annual Candytufts are invaluable for furnishing a supply of cut flowers during the winter, and that their cultivation is attended with very little trouble. The seed must be sown early in the autumn in small pots, and when the plants are about 2 inches high, thin them out to three plants to each pot; and after those remaining are nicely rooted, shift into 5-inch pots without dividing them. Stand the pots upon a bed of ashes until the end of September, and then remove to a cold frame, and give plenty of air in favourable weather. In a mild winter they will flower very freely in a cold frame, but in ordinary winters a heated pit is necessary to prevent the plants being brought to a stand-still for lack of warmth, and also to enable the frames to be ventilated sufficiently to keep the growth dwarf and stocky; but there must, however, be no "forcing" in the ordinary acceptance of the term.—*The Gardeners' Magazine.*

NOTES AND QUERIES.

BARREN STRAWBERRIES (J. H. C.)—A friend of mine has a few scores of Strawberry plants which for two seasons have neither borne flowers nor fruit. They had a strong healthy foliage, and produced the ordinary quantity of runners; and were not isolated, but grew amongst others that were productive and are three seasons old. The sorts are Black Prince, usually very productive, and a seedling from British Queen. Could any of your readers give a probable reason for this barrenness?

[No particular cause can be assigned for the barrenness of Strawberry plants; they have a tendency to come barren—a fact patent to every gardener. Sometimes the barren plants are self-sown seedlings which come up about the beds. The barren plants should be pulled up as soon as they show they will not produce bloom, and replaced by other plants; on no account take runners from the barren plants. At the Royal Horticultural Society's Gardens at Chiswick, from some cause not explained, two types of Strawberry plants, that have been well denominated "rogues," frequently put in appearance;—one is a most robust growing form that produces plenty of large leaves but no blossoms; the other gives small fruits full of seeds, and quite worthless.—EDS.]

YELLOW BLOOMING PLANTS FOR THE FLOWER-GARDEN.—There are two of these that I use somewhat largely, and which I can highly recommend; the one is *Tagetes signata pumila*, the other the pigmy dwarf orange French Marigold. Both produce yellow flowers, and attain a height of some 12 inches. If sown broadcast over the beds about the first week in April, they become during the summer perfect carpets of showy useful yellow blossoms, and neither sun nor rain mars their beauty. I merely dig over the beds in the spring, and on no account do I use any manure, and I tread the soil firmly over the bed previously to sowing the seed.

WILLIAM PLESTER.

AGERATUM, IMPERIAL DWARF.—When at Mr William Chater's Nursery, at Saffron Walden, in the early part of January, inspecting his collection of Hollyhocks, I saw the stock of the fine new dwarf blue Ageratum Mr Chater is to distribute in the spring, and I was reminded that I saw it bedded out in August last, and I was so struck with its beauty that I have come to regard it as a "perfect gem" for the flower-garden; and it should be in the hands of every one requiring that great want—a thoroughly good blue bedding-plant. In point of colour it differs but little from the old form of *A. mexicanum* or *coelestinum*, but its great recommendation consists in its dwarf habit, only 6 inches in height, and the plants literally covered with lavender blue flowers, thrown 3 inches above the foliage. It is also of value as a winter blooming plant, for the old plants that were taken up from the beds at the end of the summer were in flower on the occasion of my visit.

WILLIAM PLESTER.

ARTISANS' AND COTTAGERS' ROSE SHOWS.—I have found those excellent and instructive papers on the Rose from the able pen of S. R. H., which recently appeared in the 'Gardener,' to be sources of great delight and gratification as I perused them. The means by which Roses can be grown have been so well expressed that I believe hundreds of recruits will be added to the armies of our Queen; and I do not hesitate to say that very many rosarians join with me in tendering hearty thanks to S. R. H. for his admirable advice and suggestions. What I wish to ask is this: Is it possible that classes specially for the artisan and cottager Rose-growers could be included in the schedules of our great shows

as well as those for the amateur growers and nurserymen! There are thousands of artisans and cottagers who devote a great deal of time to the cultivation of their favourite flowers, and especially to the Rose; and I do not see why they should be debarred from exhibiting at the Crystal Palace and other great shows. I trust there is to be found some kind gentleman who will take the matter up and secure this privilege for us.

AN ARTISAN, Leicester.

[We imagine our correspondent to mean that he and others desire there should be incorporated with our large shows an exhibition specially for the class of growers he represents. It is worthy a trial, say at the Rose show of the Royal Horticultural Society in June next; but money for special prizes would have to be obtained, and then it is extremely doubtful if the amount would be large enough to induce artisans to come all the way from Leicester, for instance, to exhibit. Surely there are classes in the schedules of the horticultural exhibitions held at Leicester in which our artisan friends could exhibit; or, if they are numerous enough, they should organise a Rose exhibition among themselves, similar to the one held at Nottingham at Easter, and so capitally described by S. R. H. Let them try, and inform us how they succeed.—EDS.]

SANDRINGHAM SPROUTING CABBAGE.—We have just had the opportunity of testing, by cooking, the qualities of this new vegetable. It is a true hybrid, and was obtained from a cross between the Brussels Sprout and M'Ewen's dwarf Cabbage. In habit of growth it resembles the Brussels Sprout, but the sprouts are larger, longer, and densely produced. The leaves are like those of the Brussels Sprout in appearance, and in the head they assume a somewhat elongated form not unlike the Sugarloaf Cabbage. It is a delicious tender vegetable when cooked, and, if it proves to be hardy, is fit to rank high among our best esteemed winter vegetables. With such a parentage it cannot fail to be hardy.

WINTERING BROMPTON STOCKS.—There is always considerable uncertainty hanging over the fate of these stocks. Sometimes they will pass through a winter unscathed, and at another time will be destroyed wholesale. My experience of them has hitherto been of a very unsatisfactory kind, having on several occasions lost the whole of what otherwise appeared to be a most promising lot of plants. I hope, however, that I have just gained a wrinkle that will, in the future, prove useful. I planted out in the open ground early in the summer two separate beds of the hybrid striped Brompton Stock, which had, by the commencement of the winter, grown into very strong plants. Finding it then necessary to transplant one of the beds, I did so, and placed them close to the others, so that they formed one entire bed of about 200 plants. What is now their relative appearance? Why, this: that the severe frost we had at the end of the year killed 80 per cent of the original bed, whilst those transplanted are comparatively unhurt. After this experience I shall always transplant my winter Stocks.

A. D.

THE GOAT MOTH CATERPILLAR.—Just six months since I obtained a caterpillar form of this fine moth (*Cossus liquiperda*). It was of great size, being 4 inches in length, and as large round as the small finger of a moderate-sized hand. Not knowing what else to do with it, I placed it in a flower-pot, and stood it upon a piece of glass in my greenhouse. Some leaves were put in with it, but these it would not eat; and from that time to the present it has still remained alive without a particle of food, thus displaying a most remarkable tenacity of existence. This species is well known for its destructive raids on timber. A. D.

LANCASTRIAN.—The change you have made in the selection of the Vine is a great improvement on what they were previously. Regarding your list for the house we think it right to observe, that our experience of the Muscat Ham does not warrant its general recommendation; it evidently is a shy Grape, requires peculiar soil. Black Prince is an easily grown, showy, but only third Grape. The others are all good. On the list for late vinery we remark that Peter's White Seedling is not a very good keeper. Don't strike out West's St Peter it is a good old Grape, and comes in before Lady Downes and after the F. Hamburg. Our experience of Trebbiano does not induce us to recommend Muscat of Alexandria is far before it in quality, and keeps as well.

PROPAGATION OF ARALIA SIEBOLDI (William Hood).—Mr John Gibson Battersea Park, kindly writes in reply to your inquiry: "In reference to propagation of *Aralia Sieboldi*, I am sorry I have no definite experience as to the best mode of increasing that species except from seed; but I should not hesitate to recommend a trial of increasing it from cuttings of the roots, in the absence of seed, in the same way as *Aralia papyrifera* is increased, cuttings of the roots which make plants freely on a gentle bottom heat. The thick roots are cut into pieces of from 1 to 2 inches long, laid flat in pans or pots of light soil, drained, and covered half an inch or so with the same, and then a slight covering of silver sand. Young shoots are thrown up irregularly, and as they become sufficiently strong, should be removed and potted singly in pots, and kept in a close warm frame until the roots appear round the inner side of the pot, then gradually hardened off until they will bear a cool frame, and be shifted as required."

THE HOLY THORN OF GLASTONBURY.—When at Yeovil in the second week in January, we saw this famed Thorn in leaf and bloom, in the garden of Hoo stone House, the residence of Mr Thomas Sampson. There were several plants of it, and all in alike advanced condition. Its singular property of budding and blossoming in midwinter is said to have been miraculously derived, and a curious and very interesting account of its legendary history is given in a pamphlet recently published by Mr Sampson, and is well worth a perusal.

THERMO-PLASTIC PUTTY.—In a paper read before the Civil and Mechanical Engineers' Society by Mr R. M. Bancroft on the renewal of King's-Cross station roof, it was stated the glazing putty used in this roof was that known by the above name, and manufactured by Sir W. A. Rose & Co., Upper Thames Street. It is peculiarly adapted for fixing the glass in roofs of railway stations, greenhouses and other buildings where plate-glass and iron sash-bars are used. This putty hardens in a few hours after being used, but will, when exposed to solar radiation sufficient to cause expansion of the glass and metal, become plastic, and on cooling again returns to its original firmness, thus preventing the loss by fracture and leakage which occurs so frequently in places where the ordinary glazing putty is employed.



THE GARDENER.

MARCH 1870.



THE EDUCATION OF GARDENERS.



THIS is a subject that has come prominently before the readers of the 'Gardener' since its first publication in 1867. The course of examinations instituted by the Royal Horticultural Society and the Society of Arts naturally enough operated to call special attention to the subject; and a large number of readers of the 'Gardener' being of that class for whose especial behoof these examinations had been provided, it is not to be wondered at that a brisk discussion on the question should have been, and still is, carried on in its pages. All true educational agencies are matters of deep interest, and their beneficial operation must, and does, exert a beneficent influence on the community. In like manner, gardeners' examinations, wisely conducted, cannot fail to operate to raise the professional status of the gardener, and at the same time offer to him the means of social advancement.

But these examinations are not the end, they are only the means to the end; and herein we fancy some are apt to mistake their object and aim. To be able to take high honours at an examination is an object worthy of an earnest ambition; but it may be said to only represent the attainment of so much practical and theoretical information, the which, in order that it may work out its legitimate results, must be put out to use, and not be suffered to rust by a course of inaction. First-class certificates, and the highest number of marks, do not necessarily represent an educated gardener; they do represent a foundation on which may be built up a solid educational structure when the stores of accumulated lore have been wisely applied. What kind of use will

be made of these attainments? that is *the* question by which their real value is to be ultimately appraised. By all means let these examinations be carried on, and, if possible, more widely diffused; but the race is not won when they are triumphantly passed; rather it is the start in the race, but under highly favourable circumstances.

What is greatly needed in the present day is, some means by which a large number of gardeners, in the more lowly and needful circumstances of life, can be brought into contact with the varied streams of information on gardening matters now running out in almost every direction by means of the wide diffusion of the various gardening papers, &c. There is much need for this; and we are glad to find that in some parts of the country the gardeners in different localities are banding themselves together, and, by the aid of the principle of co-operation, creating a valuable means of mutual instruction relative to the various occupations connected with their craft. An old poet has written:—

“Kindred objects kindred thoughts inspire,
As summer clouds flash forth electric fire:”

and the more modern recognition of this thought sees in the principle of co-operation a material, if not a necessary, aid to social progress. What can be attempted by means of such a principle is to be seen in the annual report of the Bitterne and West End Gardeners' Mutual Improvement Society, which has just come to hand. The district covered by the operations of the Society is one situated a few miles south of Southampton, and combines the range of two prosperous villages lying almost side by side. By means of this Society, three copies of the 'Gardeners' Chronicle,' three copies of the 'Gardeners Magazine,' and three copies of the 'Journal of Horticulture,' are circulated weekly; one copy of the 'Gardeners' Record' is circulated fortnightly; and one copy of the 'Gardener,' and one of the 'Florist and Pomologist,' are circulated monthly among the members; and so the members of the Society have the command of a very full range of matters engaging the attention of horticulturists. The practical importance of this arrangement is thus stated in the report: “Each member has the advantage of perusing papers of the annual value of £3, 16s. 6d. for the sum of 4s. 4d.,” paid annually in the form of a weekly subscription of one penny. Then there are occasional lectures on horticultural matters about to be added, as a means of extending the usefulness of the Society; and no doubt there are many pleasant meetings for mutual converse and discussion, the value of which who shall estimate? With such a useful organisation in operation, it is perhaps not to be wondered at that this district has also a local Horticultural Society which

holds both a summer and an autumn exhibition, and produces at these exhibitions subjects that might put to shame what is often seen staged at the meetings of much more pretentious societies.

Here, then, is a movement worthy of wide imitation. What one or two men cannot accomplish for themselves, can be managed by a few combining together, and in a spirit of mutual regard and aid they can thus seize on advantages not otherwise to be made available for practical uses. No individual is so insignificant as to be perfectly useless ; —a combination of these can be made to represent a power of no mean order, capable of working out ends the utility and value of which can only be measured by the results produced.



NOTES OF THE MONTH.

At the Anniversary Meeting of the Royal Horticultural Society held on the 8th ult., an announcement was made in the Annual Report of the Council that filled many of the friends of the Society present with dismay. It formed section 3 of the Report, and ran as follows :—.

“The second subject of importance relates to the working garden of the Society. For some years past the Council have seen the necessity of changing their experimental garden from Chiswick to some locality better suited for their operations ; for the results of the cultivation there, owing to its low, cold, damp position, combined with the gradual increase of smoke and houses around it, are yearly becoming less satisfactory, whilst the expenditure entailed by the establishment is constantly increased. Moreover, the termination of the lease will of itself necessitate a change in a few years. A garden conveniently situated in pure air and with good soil would enable the Council to carry out their horticultural operations with increased efficiency and at reduced cost. An obstacle which would have hampered them in carrying out this change—viz., the expense of establishing a new garden—has been (as they believe) opportunely removed by a valuable bequest to the Society by their late Fellow, Mr Alfred Davis, which will enable the Council to effect this improvement, and at the same time preserve the memory of the bequest, and of Mr Davis’s interest in the Society, in a permanent shape.”

There is no doubt, therefore, but that Chiswick is doomed. All the glories of the past that clustered about it, and remain to this day, when it could furnish *the* Horticultural Exhibition of the Metropolis, and attract to the Gardens the *élite* of London Society, are now of no avail : it too must pass away, as other institutions that have served their purposes have passed away, leaving only the memories of what they once were behind. The Chairman, Mr James Bateman, F.R.S., stated the grounds that had induced the Council to recommend the disestablishment of Chiswick : they were—the near approach of Lon-

don westward, gradually enclosing the Chiswick Gardens by a belt of houses ; inability to maintain it, from insufficiency of funds ; and the fact that the lease is approaching termination, having only another eleven years to run. The Council had not the power to renew the lease, nor the wish to do so if they had the power.

It would appear that the paragraph of the Report referring to Chiswick is not to be taken as declaratory of the fact that the Council have determined Chiswick shall be given up absolutely, but rather that they intimate thereby their intention to refer the matter to the consideration of the Fellows. The Council adopted a somewhat clumsy method in making this intimation known, and were censured in consequence. One or two of the Fellows present made a gallant and apparently desperate attempt to stay the hand of the destroyer, and complained that some intimation had not been given by the Council of their intention so to allude to the abandonment of Chiswick in the Report. The Council were asked pointedly if the question of giving up Chiswick was to be placed before the Fellows, so as to give them an opportunity of fully considering the matter, but the questioner was met by a marked reticence by no means assuring : perhaps reticence is a virtue common to councils.

Another item of intelligence gleaned from the Report was to the effect that the great provincial show held at Manchester in July last has caused a disappointment in that it had been ascertained the returns would do no more than meet the expenses. But the Council will go to Oxford in July next notwithstanding, though the chances of favourable pecuniary results are, one can imagine, likely to be less favourable at Oxford than at Manchester.

Some few years ago, Mr Thomas Laxton, of Stamford, was successful in crossing Peas with a view to obtain new varieties of high-class character, and from the seedlings so obtained, selected a few kinds which are now being distributed. The first, Supreme, described as an early variety of unusual prolificacy and high quality, was sent out in the spring of 1869 ; and this year it is followed by Alpha, another early variety highly commended. For the last named the modest sum of *seven and sixpence per half-pint* is asked. It has recently transpired that the stock of these new Peas was purchased conjointly by Messrs Hurst & Son, and James Carter Dunnett & Beale, of London, for the sum of *one thousand pounds*, though the quantities were very small. When to this enormous price is added the cost of growing them for stock, advertising, and other necessary expenses, it must be admitted that the retail price is quite moderate, high as it appears. Mr Laxton has followed up his first success by obtaining a second batch, comprising six varieties, representing an aggregate quantity of not less than

forty quarts, and for these the sum of *five hundred and fifty pounds* is asked! One need not be surprised if raising of new Peas should become pretty general—that is, supposing such prices can be realised.

It has just been publicly stated that, by a simple arrangement of fireclay plates, so managed as not to contract the capacity of the flue at any single point, the gases, after being thoroughly intermixed, are, at four successive stages in their progress through the flue, thrown in thin streams against the surface of the boiler. No part of the gases can escape this repeated forcible contact with the boiler; and in the process the heat they contain is so thoroughly extracted and absorbed, that the result obtained, as proved by careful tests, is the evaporation of nearly 12 lb. of water for every single pound of fuel, common boiler-slack being used. This gives a large saving of fuel as compared with the best modes of setting previously in use. The patentees guarantee a saving of twenty-five per cent. The apparatus has the additional advantage of being an effective smoke-consumer. The plan is applicable to any class of boiler, can be applied without unseating boilers already fixed, and the plates being of fireclay, the cost is so moderate as to be very soon recouped by the saving of fuel.

One of the most successful horticultural exhibitions held in the north is that of the Grand Yorkshire Gala, which takes place at York on the 15th, 16th, and 17th of June next. It is said to be one of the very best provincial horticultural exhibitions, not even second to the Manchester Whitsun Show. Some good money-prizes are offered—among them, the Lord Mayor, the Sheriff, and other citizens of York give the sum of £37, in four prizes of £15, £10, £7, and £5, for 15 distinct varieties of Roses, in pots not larger than 8 inches in diameter. There is also a prize of £5 for the best seedling white Rose in pot, unnamed, with the reservation that it is to be named by the donor of the prize, Mr Thomas Lucy, Huntingdon, York. Messrs Backhouse & Son, the well-known nurserymen of York, offer a sum of £5, in two prizes, for 6 Palms distinct, suitable for table decoration, in pots not exceeding 8 inches in diameter. There are many other good prizes, and altogether the schedule is a very attractive one.

In Mr Samuel Broome, the well-known gardener at the Inner Temple, who died very suddenly from an attack of apoplexy on the morning of Saturday the 22d of January last, horticulture loses one who had made for himself a wide reputation as a cultivator of the Chrysanthemum. The details of his life are somewhat scant, but, as far as they can be gathered, it would appear that Mr Broome was a native of Staffordshire, and was born in the year 1806, and commenced his professional career by serving his apprenticeship in the gardens of the Earl of Bradford, in that county. He came to London somewhere about the year 1832,

and entered on the duties of gardener in the Temple, which he discharged for a space of thirty-eight years, up to the time of his death. Probably he did more than any other man to introduce the Chrysanthemum to the notice of the London public, and he boasted that the show he made in 1869 was the best he ever had. Visitors to his show in the Inner Temple Gardens will remember his long narrow tent, with its bank of Chrysanthemums standing on the ground at the back of it, leaving space for a narrow walk in front. Hundreds daily inspected this show, and at mid-day it was very difficult indeed to get through the tent, so completely was it thronged. He had been the means of promoting nearly all the Chrysanthemum societies round London, and some in various parts of the country; and, by encouraging a taste for flowers, he effected much good amongst the working classes in the metropolis, and especially in the ragged schools. He was the author of a work on the culture of the Chrysanthemum, first published in 1857, and he was also a contributor to various gardening journals. He was a frequent attendant at the meetings of the Central Horticultural Society, which holds bi-monthly meetings in one of the streets near Temple Bar, and of which Messrs George Glenny, George Gordon, and others found acting with them, were the principal members. He was well known at Liverpool, having acted for years as one of the judges at the Chrysanthemum exhibition annually held in November; and those who were associated with him on the last occasion of his acting in that capacity, and saw his genial flow of spirits and physical activity, little thought they saw him for the last time. He was a kindly companion and a generous friend, and he leaves behind him many pleasant memories of his genial disposition.



ON THE MANAGEMENT OF BEES.

(Continued from page 69.)

WHEN the bees crowd the mouth of the hive in comparative idleness, it is for the bee-keeper to determine whether he will secure honey or swarms. If honey is desired, supers or caps should be placed on the hives as soon as the bees show the least tendency to cluster. If a piece of new comb be placed on the super in its natural position, the bees will occupy it the more readily; and if the stock-hives be sufficiently commodious, there will not be much fear of the queen bees depositing eggs in the supers, and a large surplus of honey may be expected. If a swarm is desired, it may be obtained in a few minutes, and all the idle bees will be set to work. Of course, it is not natural to force the

bees to swarm, but it is also not natural for the bees to be idle ; and by forcing the swarm, the bee-master will perhaps save himself two or three weeks of weary watching and waiting. To obtain a forced swarm, puff a little tobacco-smoke into the hive as the first preliminary ; this will cause a terrible commotion, and the bees will appear as if determined not to endure it, and will make preparations to quit the hive when they begin to inhale so noisome an effluvium. They will rush in masses to the honey-cells as a preliminary to their exodus, and commence gorging themselves with honey, which makes them so good-tempered that the hive may be gently turned upside down, and scarcely a bee will attempt to fly or use its sting. An empty skep should then be placed upon the inverted hive, and a bandage placed round the point of contact of the two ; then with two light sticks beat the sides of the lower hive so as to cause a slight jarring of the combs : this continued for about ten minutes causes the queen and a great majority of the bees to ascend to the upper hive—in fact, the swarm gathers there, and may safely be placed on the stand.

The original stock-hive should be removed to a distance for a few days, during which time many hundreds of young bees will be hatched, and the hive will be apparently as full of bees as ever. If on driving out a swarm a queen-cell could be obtained from another stock and inserted in the old stock, a young queen would be hatched in about nine days earlier than otherwise ; and nine days in summer is something, especially at a time when honey is plentiful. By the insertion of an Italian queen-cell at this time the bees may be Ligurianised, and all the future bees in that hive would be either pure Italians or hybrids ; indeed, it is in the province of the bee-master to cause queen-cells to be created for these occasions from the best breeds of bees in his apiary. If a natural swarm be desired, the bee-master must wait the pleasure of his bees, thousands of whom remain idle until some fortuitous combination of circumstances suggests the idea, as it were, to the bees, and they prepare to swarm. This is accomplished in the following manner : The working bees select certain cells containing a fertile egg or young larva, which cells they enlarge and lengthen to such an extent that they appear something like a series of excrescences on the sides of the combs, somewhat in the shape of an acorn, tapering and pendulous, and sealed at the end with a porous covering. This causes the reigning queen to become greatly excited, and she instinctively endeavours to destroy the growing power which threatens to interfere with her prerogative. She is, however, held in restraint by the bees, who seize her by the legs and wings, and hold her back ; and they otherwise prevent her doing mischief by clustering round the objects of her hatred. This goes on

for three or four days ; but eventually the society in the hive becomes so disagreeable to her majesty that it is unbearable, and she determines on leaving possessions so dissatisfied with her government or person to their own devices ; so the signal is given, and the swarm prepares for departure. They crowd to the open honey-cells, and take possession of the honey as the first means of providing fixtures and furniture for the new home they are about to seek. When they issue forth and have alighted, the swarm should be placed in a hive and carried to the stand on which it is to remain. There they cluster closely, and in that condition they generate sufficient heat to convert, by a process of digestion, the honey in their honey-sacs into the material of which their combs are composed, and which is termed wax. This wax cannot be secreted by the bees unless they so cluster. Under such circumstances is the wax formed, and it issues from small openings, termed wax-pockets, in the sides of the working bees, in the shape of small scales, which are very plastic, and which the bees mould at their will into cells, the shape and size of which are so well known, and about which so much has been written.

In the mean time the royal cells are progressing, and the larva has become a caterpillar, which spins round itself a covering or cocoon of the very finest silk-like material. It then changes to a chrysalis, which in due course becomes a young queen bee. In the case of the hatching and nursing of working bees and drones the process is very similar, though differing in minutiae from the hatching of queen bees ; and whether the marked difference in the result in the case of the production of queen bees is due to the quantity or quality of the food, or the shape of the cell, is not at present clear ; but it is quite certain that the egg or larva which would have become, under ordinary conditions, a working bee of no sex at all, becomes, under other conditions, a fully-developed female bee.

When the time has nearly arrived for the young queen to come forth, the bees carefully pare away the waxy covering at the end of the cell, leaving only the silken tissue to cover it. This in due time the queen bee gnaws sufficiently to allow of its being pushed open by herself from the inside, when she steps forth to search the comb for honey. Having obtained a supply, her first impulse is to make war on all other young queens or queen-cells ; but if it is intended that a cast or second swarm shall issue, the queen bee is held back as before described, and the other queen-cells are carefully guarded until she leads forth the second swarm, which generally happens on the same or the next day. Sometimes two or three young queens issue forth at the same time in different parts of the hive ; and if the rage for swarming prevails, and they have not discovered each other, there may be

that number of small swarms issue from the hive at the same time and alight in different places. If each of these small swarms was placed in a separate hive, they would require very great assistance under the most favourable conditions ; and it would only be in cases where the young queens were the offspring of others of great beauty and fertility that any attempt should be made to save them. Should they all be placed in one hive, a triangular royal battle might ensue, in which two of them must perish ; and it is just possible all might be killed, in which case the bees would return to the parent hive, and remain under the new young queen just hatched or hatching there.

If the weather or other circumstances should cause the bees to determine not to swarm a second time, the first young queen is proclaimed, and she speedily destroys the remaining queens or queen-cells. This she does in a clever way, having regard to her own safety. She does not go to the end of the cell and open it, as in that case the young queen inside could get out, and would fight for it ; but she rips open the side of the cell with her mandibles, and stings her enemy in the soft part of her body, after which the bees cast the dead carcass forth, and the queen-cells are pared away by them until there is only left of each so much as is about the size and shape of the cup of an acorn. When two young queens issue at the same time, if they discover each other a royal battle is inevitable, and each strives to gain the mastery and inflict a mortal stab ; and it might happen they should so grasp each other as that both would be killed simultaneously.

(To be continued.)



THE CULTIVATION OF HARDY FRUITS.

THE CHERRY.

(Continued from page 73.)

THE pruning and training of the Cherry are works of comparative ease—in fact, after a proper start has been made, there is less trouble with the Cherry than any other of the large-growing hardy fruits. The shoot made the first year after budding or grafting should be encouraged as much as possible, not only to form a nice strong branch, but also to perfect its wood thoroughly by the end of the season. The mode of training must regulate the style of pruning to be adopted. As a rule, in the British Isles the Cherry is grown as a wall-tree ; nevertheless in some districts, but more especially in England, it is

to be found as a standard, and as such it sometimes succeeds remarkably well. The fruit is perhaps not so large in size or so fine in flavour as when grown against a wall; yet those who may not be able to cultivate on walls need not fear to plant standards. When trained trees are desired, the maiden shoot can be cut back to three or four eyes at the first pruning. The bud below the cut ought to be on the front of the branch, while the next two ought to be, one on the right, the other on the left side of the shoot, so as to be in the most favourable position for forming the side branches. Next year these three buds should produce three shoots, the top and centre ones forming the leader, the side ones forming branches. Should the leader go away too strong for the other two, it would be as well to stop it at the height of 12 or 15 inches, so as to throw the strength of the roots partially back into the other branches, or cut the leaves upon it in the manner recommended by Mr Thompson for the Plum, and quoted by me when writing of that fruit. At the pruning season the leader may be cut back to about 6 or 8 inches, leaving the top bud as already directed. The two side-shoots, if ripe to the point, may be left nearly their full length. When cutting these, the point-bud should be left on the upper surface of the branch, and the branch itself ought to be trained in an upright direction—say an angle of 45° —to encourage a free growth the following season. It will be noticed that the mode of training here recommended is neither the fan nor the horizontal style, but a sort of modification of both. An approach to the fan I consider the best; for should a branch at any time die away, is far more easily replaced by this mode of training than any other. By leaving the leader the length recommended, the horizontal style of pruning is to some extent adopted; but 6 inches being too close to horizontal branches, the fan style of training must be adopted in combination with it. The reason for recommending the adoption of this plan is, to avoid the production of too many branches closely set together upon the stem, which, when the tree ages, is often the cause of gum exuding. Each year the pruning and training of the tree must be conducted upon the same principle as that already explained, until the whole tree is formed, when the point-shoots may be allowed to stand without being cut back, except in cases where the wood is not perfectly ripe to the points. The branches which at first have been elevated should be gradually brought down to their permanent positions. From 10 inches to 1 foot I consider a good distance between the branches of a Cherry belonging to the spur-fruited varieties, which is the division under notice. The spurs are produced and managed in much the same manner as in the case of an Apple or Pear, only in the case of the Cherry the spur is generally formed by cutting

the shoot a little further from the branch—at a distance of about 2 **in**ches.

The Morello is an exception to the rules above given, so it must be **treated** of separately. The others I have termed spur-fruiting varieties; this I may term non-spur fruiting. The fruit is borne on the wood **of** the previous summer in the case of the Morello, so the aim of the cultivator should be to keep his tree always well supplied with young fruit-bearing wood. Rules cannot well be laid down on this point, but I will endeavour to be both plain and concise. The first year the tree may be pruned as directed above; the second year, if the growth be very strong, the same course may be pursued, but where moderately strong wood is produced, it will suffice to lay against the wall as much wood as is considered necessary, removing the rest entirely by a good clean cut. In the case of trees growing remarkably strong, root-pruning may be necessary for the encouragement of fruit-bearing and moderately-sized wood; but in no case do I consider this desirable if it can be avoided, as it is often the forerunner of gum, unless done with skill and care. To keep up a regular supply of good fruit-bearing wood from the trunk of the tree to the extremities of the branches, it is necessary to encourage young wood, and cut away the old much in the same manner as recommended for the Peach. The trees ought never to become crowded with young wood, as the result of that is inferior fruit. By judicious management a tree may be kept in fruit-bearing condition for many years, without recourse to the laborious task of taking it entirely down and rearranging the branches. Several Morello trees here are over fifty years of age, yet bearing by far **the** largest crops and finest fruit I ever saw. They are healthy and vigorous, covering from 700 to 800 superficial feet of surface-wall, and furnished right to the base with fruit-bearing wood. The Morello **is** not so subject to gum exuding as most of the other varieties. **In** training the Morello I have found from 3 to 4 inches a good **distance** between the shoots. The point of the shoot laid in should **never** be cut out, as it often happens, especially in the case of old **trees**, that the point is the only wood bearing buds on the whole shoot. **The** removal of it would therefore not only cause the loss of a shoot **for** the next year, but also the loss of the fruit for the current season.

Where the Cherry is intended for an espalier, for which it is well **adapted**, the mode of pruning and training recommended for the wall **will** be found to suit very well. The espalier has the advantage over **the** standard in this respect, that it is more easily secured from the **ravages** of birds; in some parts of the country they would attack the **fruit** long before it was ripe, unless nets were applied.

Where the Cherry is grown as a rider, the management is the same

as in the case of dwarfs, with this exception, that if grafted or budded low down upon the stem, the leading shoot must be trained up to the desired height against a stake, after which the pruning and training are the same in every particular.

The management of the Cherry as a standard is exceedingly simple. The tree should have a clear stem of from 3 to 4 feet, and for this purpose it will be necessary to cut the leader down to within a few inches of the desired height. If a clean stem is desired, it will be as well to remove all the buds up to the height desired, leaving only those intended to form branches. The following year, if the tree is in vigorous health, it will produce from four to eight nice strong shoots. One of these may be selected as a leader, and five or six of the others left to form the tree. The leader may be cut back to a few feet in length, and the side shoots to 15 inches in the case of moderate growing varieties; whereas in the case of vigorous-growing sorts these lengths may be increased by 6 inches or thereabouts. The year following, all the shoots necessary to constitute the head of the tree will be formed, so that it will only be necessary to thin out superfluous branches where not needed, and encourage fruit-bearing wood and the production of spurs. By simply following this method year after year, the results will prove far more satisfactory than where an elaborate system of pruning has been adopted. In the management of the Cherry as a standard, the cultivator should aim to have the branches distant at least one foot from each other, so as to allow a free circulation of air, not only for the ripening of the wood, but also for the better colouring and flavouring of the fruit.

The summer management of the Cherry consists in shortening back to about 3 inches all shoots made during the growing season which are not required to form branches. Those intended for this purpose ought to be laid loosely against the wall to protect them from being broken. I prefer performing this operation about the middle of July and only once for all, as I find better and riper spurs are formed this way than in the case of trees pinched three or four times during the season. In the case of the Morello, however, I never summer prune at all, unless I find there is a superfluity of wood which would not get thoroughly ripened, in which case I thin out a few of the worst shoots to facilitate the ripening process. The less cutting in summer there is, the better choice of wood in winter for furnishing the tree.

JAMES M'MILLAN.

(To be continued.)

THE CULTURE OF THE ROSE IN POTS.

THE Rose is always beautiful, at whatever season of the year it can be had in bloom, but especially so in the early spring months, when in the open air can only be found such things as the modest Aconite, or the Snowdrop in all its fair purity. Valuable at all times, it is especially so as a plant for the ornamentation of the greenhouse thus early in the season. With this short preface, I have now to narrate the method of the cultivation of the Rose in pots I have adopted for some time with much success. I have now a house of Roses—a house specially allotted to their growth, the plants in which began to break into vigorous growth at the commencement of the year, and now give the promise of a splendid bloom.

But first, as to the soil I use: Of loam, moderately weighty and rich in fibre, I take one-half; cow-manure, well decomposed, one-fourth; the remaining fourth being composed equally of leaf-mould, sand, and bone-meal. This is well mixed together, but not riddled; the fibrous loam will be quite small enough if the pieces are of the size of pigeons' eggs.

Second, as to pruning. In this case, as affecting the results produced by moderate or severe pruning, experience, combined with judicious watchfulness, is alone the best preceptor; for it is required that the cultivator be perfectly conversant with the habit and vigour of the plant to be operated on. Should it make weak growths, it will be requisite to cut away a good portion of them, and leave only those that show the possession of strength, which should be pruned back to about half their length, less or more, according to the vigour of the shoots. In the case of those varieties making robust growth, and having a vigorous constitution, the strongest shoots, especially in the case of Hybrid Perpetuals, should be well thinned out, and the remaining shoots pruned back to eight or ten buds.

Thirdly, as to potting. The practical gardener knows that this process is a most important one, and that it is sometimes very imperfectly performed. Many who are most scrupulous in regard to the nice distribution of the roots of a vine or tree when planting it, will yet ram the roots of another plant into a pot without any concern as to whether the plant will have a fair chance of growth allowed it or not. The cultivator should provide pots of different sizes to meet the requirements of the different-sized plants he will have, allowing an abundance of root-room, more especially for those that have large fibrous roots. Plenty of drainage should be provided—as much as 2 inches of broken pots for a pot of 7 inches in diameter, and rather more for pots of a larger size. Over this drainage a layer of moss should be laid, and

over this a few of the largest lumps from the heap of soil prepared for potting. The plant to be potted being turned out of the pot it has hitherto occupied, the ball should be partially reduced, the roots examined, the dead roots cut away, as well as any long straggling points. I have always found that where these are headed back, a quantity of small fibrous roots or feeders is put out round the cut made by the knife, which proves of great help to the plants. The ball being thus nicely trimmed, a handful of the compost should be spread over the rough surface of the turfy lumps placed above the drainage, and the roots at the bottom of the ball spread carefully over the soil, and adding soil and arranging the roots till the ball is covered. The pot should then be filled to the rim, and the operation finished by pressing the soil together with the fingers till it forms a compact body.

Before removing the plants to a light and airy part of the greenhouse, or any other place in which they are to remain, they should be well watered so that the soil be quite saturated with moisture; and this will be found sufficient for their requirements till shoots begin to be formed, after which water, with which a little guano has been mixed, may be given them somewhat copiously, according to the requirements of the plants. On every available occasion the plants should be given sun and air without measure in fresh dry weather; in case of frosty weather, air must not be so plentifully given.

I have found the "Queen of Flowers," as the Rose is most appropriately named, to possess somewhat gluttonous capacities, and able to absorb strong stimulants, not only with impunity, but to her decided improvement; but it must be remembered that such should only be administered when good healthy growth is being made, on to the time when she shall complete the rich fulness of her marvellous beauty, which has distinguished the "Queen of Flowers" almost above every other flower.

A. KERR.



HINTS FOR AMATEURS.—MARCH.

THERE are perhaps more seeds sown during this month and next than all the remainder of the season, and it may be of use for beginners to have a few brief remarks on seed-sowing. When we read the instructions given by some as to the quantity of seeds required to supply a given piece of ground, we conclude that there must be very extravagant notions abroad as to the cropping of gardens; and when we still further learn what one man pays for seeds, while another does not pay half the sum, and has his ground in proportion much better cropped

it is a proof of sad mismanagement on the part of the former. One **of** the greatest evils in seed-sowing is, to sow too thickly—this is more **app**licable to small seeds. When the seedlings come up in matted **tuf**ts, their strength is impaired at the beginning, and a train of evils **oft**en follows, such as weakly growth, premature seeding, &c. Deep-**sow**ing of small seeds, especially at a time when the soil is cold and **wet**, is often the cause of failure. Sowing on wet heavy ground, and **tre**ading while the soil sticks to the feet, is attended by the worst **res**ults; and when the ground is dust-dry, it should be moistened a **litt**le (in hot weather it should be thoroughly soaked the day before **sow**ing); for if no rain fall for some time, the seeds may perish by **drou**ght; or if the plants come up, they are so drawn and weakly that **they** are attacked by mildew, or they are unable to stand the slightest **att**ack of vermin of any kind. Take Peas as an example. In dry hot **we**ather how soon the crop will give way to mildew, if the soil is dry **at** sowing-time, and has only been turned over one spade deep, leav-**ing** a hard bottom, into which the roots cannot penetrate. Pods come **half** their size, and the Peas are so hard and tasteless that they are **oft**en denounced as a very inferior kind; and the vendor who may **have** recommended them will get, undeservedly, a character not at all **desir**able. Hence the verdict pronounced on good articles, which **pre**vents their coming into general use when they really are valuable **acq**uisitions. Watering of seeds is often done injudiciously. When **the** ground is dry and the surface baked hard, it is useless to water **before** it is broken up either by hoe, prong, or trowel; then the water-**ing** should go on gently at first, and a good soaking be given, and done **with** it for the time. Cold surface-dribblings are the ruin of many **valu**able seeds and plants of every description. Vermin at all seasons **of** the year destroy great quantities of seeds and young plants as soon **as** the latter come through the soil. We often find wood-ashes, soot, **red**-lead, and tobacco-powder do much to save crops. The two latter **are** generally the best, and they all can be applied over the seed **at** **sow**ing-time, or sprinkled over the young leaves as they are forming **above** ground, either using when dew is on the surface, or moistening **first** with water from a rose. When sowing seeds, we always can **man**age them more easily when sown in drills than sown in beds **broad**cast. The first system allows hoeing, and also air to pass along **between** the rows, giving strength and sturdy habit to the plants. **They** should not be left too long in the seed-rows to become matted, **but** be planted out a few inches apart on any spare ground till ground **can** be prepared to plant them in to stand for crops. Each kind **should** be carefully labelled when sown or planted, so that a correct **note** of them may be made. Asparagus-seed may be sown on a bed

or border, for transplanting next season. Sandy, rich, and deep soil suits it well. Beds may be forked over, breaking into the surface a quantity of good rotten manure; or soil may be thrown from the sides over the manure, as the crowns, being near the surface, might be injured by inexperienced hands. Where plantations are to be made, let the soil be prepared, if not already done, by trenching deeply and giving liberal supplies of manure, and sand if the soil is heavy. Beans may be sown for a full crop, and those coming through the ground should have the hoe freely worked among them. Beet may be sown in small quantity, if supplies are required early, but reserving ground for the main supply, to be sown about the end of April in Scotland, and two or three weeks later in the south of England. Pinches of early Broccoli may be sown soon, and the main crops from the third week in the month to middle of April. Walcheren, White Cape, Granger's, and Snow's may not be sown for some time to come, unless they are preferred very early in autumn. Cauliflower may be sown every few weeks as required, first judging what space can be afforded for its growth, and to have successions to keep up a regular supply all the summer and autumn. Cauliflower under hand-lights and other protection may have the surface of the soil stirred among the plants, and any bad leaves picked out; a little short litter placed over the roots will help to keep out cold or drought. Brussels Sprouts for first main crop may be sown soon: our latest sowing of these last season were by far the best Sprouts. Cabbage of sorts may be sown to succeed those which have or are about to be planted from the winter-protected stock. They require plenty of decayed manure; and later, when in full growth, they will be improved with several soakings of manure-water. Dryness or poverty at their roots gives tough inferior produce. Savoy and Kale may be sown for a full crop. In Scotland these are often sown in autumn, and kept over winter, but the crops (though often rank in growth) seldom are so useful for culinary purposes as those sown in spring. Red Cabbage which have been planted in autumn should have the decaying leaves picked off, and the hoe used freely among them the first dry opportunity. Seed may be sown, as the small heads, which will come in late, are much better for pickling than when very large and blanched. Carrot may be sown in small quantities if required. In the south they quickly run to seed when sown for main crop before the end of April. A little lime and soot spread over the surface will help to keep the crop safe from vermin; it can be pointed over before the seed is sown. Turnip may be sown on a sheltered piece of ground to give an early supply. When the spring is severe, and no proper protection can be afforded, Turnips run to seed before they are of a useful size. Celery may be

sown towards the end of the month : it requires protection and a little warmth ; dryness, or a check from cold winds, is liable to cause it to run to seed. A hand-light, or small box with a square of glass to slide in it, will raise hundreds ; then they will require pricking out on a surface of manure a few inches thick, made firm, and an inch or two of soil placed over the surface, and the plants allowed 4 inches apart, fastening the roots in the soil with a dibble. Allowing the roots to remain loose in the soil will result in premature seeding. Shade from strong sun and sharp winds. Leeks for main crop may be sown at once, either on a bed to transplant them from, or where they are to grow. In the latter position the crop has to be thinned out from 8 inches to a foot, the rows being 10 or 12 inches apart. A greater width may be required on extra-rich soil ; earthing-up to blanch the leeks is necessary when they are not transplanted. The thinnings, however, from the main sowing, may be planted in deep holes on highly-manured ground. Lettuce may now be sown in a sheltered position ; also Radishes to be protected. Litter, hoops, and mats often do much in absence of glass, but covering and uncovering daily gives much labour. Onions and Parsnips, if not already sown, should receive attention as early as possible. It is not surprising that the practice so often followed with these crops ends in complete failure. The turning over of ground, and cramming in a quantity of manure just before the seed is sown, is too often labour thrown away. Parsley may now be sown for a full supply. Edgings of it are all very well ; but when the season is very dry, a deep, well-manured border, well cropped with Parsley, is necessary where much of it is wanted all the year round. A crop of Peas may be sown, either a first or second early sort ; and if dividing, without shading, any of the crops already named, good Peas will be had, and little waste of ground. Where they have been sown in boxes, and are ready to plant out, a favourable day should be chosen, and some kindly soil placed at the roots of the Peas in process of planting, and stake them at once to give shelter. Potatoes may be planted for full crops whenever ground is dry enough. Changing suddenly from warm dry winter-quarters and planting them in cold wet ground, gives a check which often kills the seed. Wide planting for heavy crops of fine tubers is strongly recommended by the most successful growers. Rhubarb should be planted before the crowns are too far grown ; and rare or scarce kinds may be potted in free soil, and planted out when weather is warmer. The latter system we practise more or less every season. We force hundreds of roots, and they are weakened, and some of them killed. Dividing the crowns separately, and starting in pots, often secures fine roots, when by ordinary treatment they would perish in the soil. Pieces of Seakale, 4 inches or less long,

should now be planted in rows 2 feet apart. One foot between the roots in the rows will be enough when they are grown for lifting. Seed for fresh stock may be sown on soil where no stagnant moisture is to be found, otherwise the seed often rots in the ground. Tomatoes may now be sown in heat; pot them in light rich soil at first, and then turfy loam and manure may be used where it can be had. They require heat till they are of a good size, when gradual hardening is necessary before they are planted out, or planted in large-sized pots. Plant Garlic and Shallots if not already done; also small Onions, to keep up a supply, if there is any likelihood of scarcity, till the main crops are fit for use. Kidney-Beans need not be sown this month except under protection of a frame. The seed perishes quickly to damp or cold. Garden herbs may be cleared of weeds, &c., fresh surfaced, replanted, or divided if necessary. Mint may be lifted and placed in a little heat to give a supply till wanted.

Fruit-trees in bloom should be kept dry if possible. Thin canvas or other material, to be drawn down in heavy storms of rain or hail, does good service: the abuse of covering is one of the reasons why little good is often had from it. Peaches, or any other trees not nailed should be seen to soon; and care is necessary, when tying, not to rub off the bloom-buds: thinning the latter, when done judiciously, is of great advantage. On rank-growing trees extra blooming may be of service, but they should at least be allowed room to prevent them smothering one another. Wood-buds may be rubbed off to lighten the trees and give light to the fruit—this, when done early, gives no check to the tree: the top shoots (which may be stopped at the fourth leaf), and one or two near the base of old shoots, are generally enough. The best guide is the space which remains uncovered, but there should be no crowding of wood or foliage; and before trees are in full leaf, it is a practice of ours to mark on the wall any space which it is necessary to take a leading shoot, as when the wall is covered one cannot always do as they should like, and we always have some old shoots which are to have their places taken by young ones. All well-placed natural spurs should be left on fruit-trees. Thinning out wood-buds where they are too thick or wrongly placed. Grafting may be done about the end of the month; the stock and graft cut to fit each other, (allowing the barks to fairly meet) is one of the principal secrets of a grafter's success. Tie them secure, and plaster with clay or grafting-wax over them to keep out air. There are many ways of grafting. The most simple method is often attended with the greatest success. Cuttings of Currants and Gooseberries may now be made about a foot long, picking off all the buds except three at top: close over at a joint; plant the cuttings in any spare ground to root.

Every border and plot in garden should now be squared off to size, keeping an orderly appearance, and the hoe should be used on every favourable opportunity, keeping every surface clean, as well as letting air into the soil among crops.

Auriculas, Pansies, Carnations, Pinks, and Picotees require clean surfaces, and those growing in pots may require a shift into soil, well examined for wireworm. Abundance of air and careful watering are necessary. They require to be oftener looked over when the season advances. Tender Annuals—such as Balsams and Cockscombs—may be sown in heat, carefully potted in small pots, and allowed plenty of light. Air must be given carefully on cold days. Bedding-plants may be propagated as quickly as possible, hardening off gradually those that are rooted. Be careful not to prune back such plants as Aloysias, Fuchsias, &c., till they show what parts are dead and what alive. Water gradually as growth advances, giving enough to reach all the roots when watering is done. Roses may be pruned, cutting back weakly growers to two or three “eyes;” strong-growing kinds may be thinned and cut back only moderately. Surface-dressing will help free growth.

M. T.



SOMETHING ABOUT THE CHRYSANTHEMUM.

At the end of last November I received a note from Mr J. James, gardener to W. F. Watson, Esq., Isleworth, near London, asking me to inspect a conservatory full of Chrysanthemums, the which, though rather past their best, were yet in fine bloom, notwithstanding that some of the largest flowers had begun to fade. I am bound to say they were the very finest lot I ever looked upon, cultivated in pots. A foretaste of what I might expect to see at Isleworth had been presented at the meeting of the Royal Horticultural Society, on the 17th of November, on which occasion prizes were offered for Chrysanthemums grown in pots, as well as cut blooms, and in both instances Mr James entered the lists to do battle against the champion growers of these flowers. In the class for six plants in pots, three collections competed; two of them were trained to wire skeletons in the usual mode adopted, and were well grown, and pretty well covered with flowers. Of the type, they were very creditable specimens of pot-culture, but, as is usually the case, the flowers were small and thin, though somewhat numerous. The six plants staged by Mr James were of quite another style; they were grown in the natural form taken by the Chrysanthemum—an upright stem, branching out from 1 to 2 feet from the ground, each having from eight to twelve branches,

at the point of which was a magnificent bloom, of great size, finely coloured, of full substance, and splendidly incurved. Taking the quantity of floral matter (if such an expression is admissible) entering into the composition of one of these flowers, they were equal to six or eight of the flowers of the plants trained on the wire-skeletons, with the added value of the finest development. The Floral Committee, who sat in judgment on the claims of these rival styles of growth, gave their decision in favour of Mr James—a thoroughly just and right judgment. It may be stated that the mode of growth—*i.e.*, the habit and appearance of the plants—was exactly similar to that adopted by Messrs Salter & Son of Hammersmith, whose doings with the Chrysanthemum are chronicled in another page.

I saw readily enough the advantage of the style of growth adopted by Mr James in relation to the use of the Chrysanthemum as a decorative plant for the conservatory. A huge, formally-trained plant, from 3 to 5 feet in diameter, is of but little value as a decorative agent in a conservatory, destitute alike of natural grace or elegance. As both are sacrificed by the mode of training adopted, they require to be put out of sight, when brought home from the exhibition stage, as offensive to a correct taste. On the other hand, when I went to Isleworth, and saw, in the handsome conservatory attached to Mr Watson's residence, the magnificent floral display made by Mr James, why, the conclusion was inevitable, that there, on the stage of that conservatory, could be seen something very much better than the display made by the huge plants at the Chrysanthemum Exhibition at Liverpool in November last. On this lean-to stage were some 260 plants of large-flowering Chrysanthemums, with a few of the best of the older Japanese varieties dotted about among them for the sake of novelty, and having a front edging of the dwarfer-growing Pomponé varieties. In addition, there was a row of plants standing along on the opposite side of the conservatory, so a perfect floral avenue was obtained. A large portion of the plants were in pots, 10 inches in diameter; some of the smaller plants, and all the Pomponé varieties, were in 24-sized pots, the plants averaging from 3½ to 5 feet in height. Believing as I do that a successful cultivator can always say something, when detailing his method of culture, that must prove of use to other cultivators who can only reach a lower level of success, I got Mr James to give me an outline of his cultivable process, that others may perchance be enabled to go and do likewise.

The cuttings from which were gradually developed these fine plants were struck in January of last year. For the future Mr James will strike his cuttings in February, so as to have his plants of rather dwarfer growth. Every one, almost, knows how readily cuttings of

the Chrysanthemum will strike in a little warmth at this season of the year; and as soon as they are sufficiently rooted, Mr James pots them off into 60-sized pots, and for a second shift into 32-sized pots, always being very careful that the plants have plenty of root-room. The large-flowering varieties are never stopped; and Mr James was particularly emphatic on this point. I know that some cultivators demur to this, but there is no mistake as to Mr James's view on the subject. When established in the 32-sized pots, they are shifted into the blooming-pots, and put out of doors in the full sun, for they are said to do best when so exposed. An abundance of water is given them, no check is received, and a fine and vigorous development of foliage is the result. As soon as they begin to throw up their flower-buds, the disbudding process is commenced, and one shoot is allowed to carry but from one to two flowers. Now also manure-water is applied; it is a time for generous feeding, and Mr James feeds them with liberal diet, as if they were city aldermen. The manure-water is manufactured by placing cow-dung and some pigeons'-dung in a tank, and then diluting it, when administered, according to its strength. Mr James uses it in that state, that if a pan 2 inches deep were filled, the bottom could be seen. Just as the buds are beginning to expand, the plants are arranged in the conservatory, the varieties being alternated according to the colour of the flowers and the respective height of the plants. For the space of three months there is a grand supply of flowers; and when the plants have done blooming, they are cut down and put away in a cold frame, to make stock for the succeeding season.

Now for the sorts Mr James cultivated. Looking over his collection, I noted down the following as very fine, which I have endeavoured to group according to their colours. Shades of crimson, Albion, finely incurved; Julia Lagravere, Progne, Captivation, Sam Slick, finely incurved; Sanguinea and Dr Sharpe—this last, like Julia Lagravere, is a reflexed flower, and both are thoroughly good for pot-culture. Of bronze and cinnamon-coloured flowers, Josiah Wedgwood, John Salter, extra fine; Abbé Passaglia, General Slade, Antonelli, Golden Eagle, Lord Ranelagh, Garibaldi, General Bainbrigge, Sir Stafford Carey, Prometheus, Robert James, and Cherub. Of lilac and rose-coloured flowers, which shades include a large number of the best varieties in cultivation, there were Alma, which, though a little rough, comes very fine; Fingal, extra fine; Lady Talfourd, Venus, Ossian, Prince of Wales, Lady Slade, Lady Hardinge, Leon Lequay, Princess of Wales, very fine indeed; Princess Teck, very delicately tinted, one of the best; and Little Pet, also delicate, small in size, but remarkably good. Of yellow flowers, Gloria Mundi, extra fine;

Yellow Perfection, Golden Nugget, Jardin des Plantes, the best yellow; Cloth-of-Gold, very fine indeed; and Golden Queen of England, of great size, and one of the earliest to bloom. Of white flowers, Empress of India, extra fine; Beverley, very early to bloom, and lasts a long time; Mrs George Rundle, a most exquisite flower; Mrs Heale, a very fine flower, but does not close well in the centre; Mrs Haliburton, Queen of England, and Virgin Queen. Of the anemone-flowered varieties, the two following were very fine—Fleur de Marie, pure white; and Prince of Anemones, lilac-blush, the first one of the very best in this section.

The Japanese varieties were Dragon, bronzy salmon; Red Dragon, reddish chesnut tipped with yellow, very showy; The Daimio, lilac, becoming tinted with rose as the flowers age; and Nagasaki Violet, rosy violet, with golden disc. Of Pomponé varieties the following were good: Mrs Dix, blush, bordered with rose; Helene, rosy violet; Rose Trevenna, rosy blush; Alexander Pélé, salmon bronze; Aigle d'Or, canary yellow; and Madame Montels, a pretty anemone-flowered variety, white, with yellow centre.

Scarcely does any flower so well repay the cultivator as the Chrysanthemum. Just when the summer has passed away, and the trees and hedgerows are shedding their pleasant leafy garb, and the flowers of the garden are laid low, then the Chrysanthemum opens its flowers, and through the autumn months does a cheerful service, the more valuable because it renders it almost alone, having so few floral contemporaries. That it should be a popular flower is only natural, for in many cottage gardens it can be seen—the last remaining scene of the floral panorama it is the function of spring and summer to present to the admiring eyes of the children of men.

OBSERVER.



ANOTHER CHAPTER FOR AMATEUR HORTICULTURISTS.

WHAT constitutes an amateur horticulturist? is a question that seems just now to require a definite answer. Many persons are apt to assume that the possession of a garden and the pretence of having performed the labour required in it, however slovenly it may have been done, authorises them to assume the designation of an amateur horticulturist, whilst another claim has been made, by a set of people who know nothing whatever of the theory or practice of gardening, to be distinguished as amateurs, on the ground that they have become members of a horticultural society. This latter claim is certainly very ridicu-

lous, but I have heard it put forth in sober earnest recently by some who were jealous of the number of professional horticulturists then sitting upon the committee of a local horticultural society. I take an "amateur," in a horticultural sense, to be a person who loves the practice of it and all that relates to it, and who, not being a professional gardener in the ordinary acceptation of the term, does yet display such a knowledge of gardening and a capacity to acquire more of the knowledge, as shall place him, in respect of many of the subjects he cultivates, almost or entirely on an equality with his professional brethren: nay more, there are some true amateur horticulturists who are in reality among the very lights and leaders in certain sections of horticultural practice. These, of course, constitute an exceptional class, but the great mass of amateurs are to be found in the humbler walks of life—such as clerks, small tradesmen, artisans, and labourers, who, after their ordinary daily occupations are over, find pleasure, recreation, and even profit, in devoting their hours of leisure to the cultivation of their gardens and the few specialties to the growth of which they particularly incline. I stated in my previous paper that I purposed saying something, later on, having special reference to that numerous class that are designated general amateur cultivators, who, being without any particular taste, yet take special delight in all the various features of their gardens. Perhaps they have a small greenhouse filled with plants of a varying character, that are just now looking very rough through the want of a little attention; their *Pelargoniums* are covered with dead or half-rotten leaves, that should be at once gathered off, and the plants neatly cleaned; the *Fuchsias* want to be shortened back and exposed to the light to induce a strong healthy growth; *Cinerarias* will want shifting into larger pots, and kept moist, as nothing promotes green-fly amongst these so much as the flagging of the foliage; *Calceolarias* should also be shifted into their blooming-pots, and kept as near the glass as possible; nothing spoils them so much as becoming drawn for want of being nearer the light; and they require watching closely for green-fly, and the plants should be fumigated the moment this pest becomes visible. The great secret of keeping plants healthy in a greenhouse is to keep not only the plants, but the house also, very clean—to water all but growing plants sparingly, and even then to be careful that no stagnant water lies about, either on the shelves or floor of the house; fire-heat should not be given too freely, as its chief use in a greenhouse is to keep out frost and damp, when these descriptions of weather prevail. Towards the end of the month, some pots of tender annuals may be sown, such as Ten-week Stocks, Asters, Balsams, Cockscombs, &c., and placed on a shelf near the glass—the earlier they are pushed forward the bet-

ter. Especially be careful to give air on all possible days, as its influence during the spring months is of vital importance upon plants that are expanding into growth ; the healthier and more robust this growth can be obtained, the better for the plants all the rest of the season.

Every villa resident should possess a small mowing-machine, and thoroughly acquire the use of it : no more exhilarating occupation can be found for the amateur gardener before breakfast than an hour's employment of it. Apart from the physical results involved, the pleasure derived from the appearance of the work done is very great ; indeed, few things add so much to the decoration or the enjoyment of a garden, as a smooth, cleanly-mown lawn. Just now the appearance of it may be marred by worm-casts, but a good birch broom, wielded by a strong arm, will soon disperse them, and with them also any other refuse that might have congregated. Until the grass requires mowing, and that will soon be, the broom should be often used, and the roller also, if one is at hand. Then when the mowing-machine is brought into requisition, the ease with which it will work, and the greater neatness of that work, will more than repay for the expenditure of the previous labour. Perhaps in nothing is our amateur horticulturist so much lacking as a knowledge of the most efficient way in which to apply his labour. Many men will work, and work continuously, and yet be always in a muddle (a characteristic, by the way, of the doings of many of our professional men), a defect excusable in amateurs, because they have not gone through that routine of garden labour that begins with a boy washing pots and ends only with the retirement from work altogether. To aid him in surmounting this defect, let me advise him always so to apportion the work of his garden as to be able to go over the whole of it at regular intervals, and make a thorough job of it as he goes. Thus, when the lawn has been mown, the beds and borders should be cleaned and rendered tidy, and, if not already done, let them be neatly forked over with care, so that any hardy flower-roots growing therein may take no harm ; the edges of the grass, both to the borders and the walks, should be neatly trimmed, and then, when the soil has been dressed, the paths weeded, swept, and rolled, it is to be hoped your pleasure-garden will vie for tidiness with the internal arrangements of your habitation. Then the kitchen-garden must have its necessary attention ; and here, possibly, matters are somewhat chaotic, owing to the unfavourable weather that has prevailed. The pruning of all trees and bushes should be done first ; that accomplished, and the refuse-cuttings burnt, then some manure must be got on the unoccupied portions of ground, and be at once dug in. This is glorious exercise, especially before breakfast ; there is nothing that will give our amateur

gardener so fine an appetite for his rolls and coffee as the turning-up of the surface of mother earth. This work done, as fast as time will admit of its accomplishment, the soil will then be ready for the reception of the various spring crops, respecting which so much was so ably said by "M. T." last month, the pleasure of sowing and planting of which is only eclipsed by the pleasure of watching and tending their growth and maturation. An amateur's flower-garden should be to him emphatically a source of high pleasure; but his kitchen-garden should not only be this also, but even a source of profit; and this latter gain will mainly depend upon the labour he expends upon it, and the judgment he displays in directing it. I cannot advise him to do better than to constantly study the pages of the 'Gardener.'

SOUTHON.

TREE-FERNS.

NO one doubts that fine-foliaged plants have wonderfully progressed in public estimation during the past few years, and it may be fairly interpreted as a certain sign of the increase of good taste in this country. Of these plants, the Tree-ferns form a grand tribe, and with noble proportions of growth there is always found in happy combination—elegance and grace. Their fine graceful habit and singular distinct appearance render them peculiarly adapted for conservatory decoration or other purposes. As many as twenty-four, at least, fine forms of these Tree-ferns are in cultivation, from the magnificent Tree-fern of New Zealand (*Dicksonia Antarctica*), with its immense spreading fronds and gigantic stem of from 4 to 10 feet in height, down to smaller forms, on stems from 1 to 2 feet in height. Of the genus *Alsophila* there are some ten fine species. Of these the most ornamental are *A. aculeata*, or *ferox*; *A. australis*, *A. Capensis* (remarkable for having abnormal growth, and clothing the upper part of the stem in a curious manner), *A. excelsa*, and *A. Latebrosa*. Another grand and noble Tree-fern is *Cibotium princeps*, with its noble spreading arched fronds. Perhaps nobler still are the grand species of *Cyatheas*, such as *C. arborea*, *C. medullaris*, *C. serra*, and *C. Smithii*.

Reference has already been made to *Dicksonia Antarctica*; and equally remarkable, and of similar noble proportions, are *D. arborescens*, *D. squarrosa*, and *D. Youngii*. Another most distinct and curiously grand Tree-fern is *Hemitelia Horrida*, possessing a truly graceful appearance, from the slender head supporting spreading heads of immense light-green fronds of smaller growth. But not the less elegant are the *Lomarias*, particularly *L. discolor*, *L. Gibba* (a most beautiful and graceful Tree-fern, of small but handsome growth), and *L. zamæfolia*, a very interesting form. Lastly may be enumerated the beautiful *Todeas*; *Frazerii*, and *Pellucida*, requiring a moist, close atmosphere, but very beautiful when well managed.

For conservatory decoration the Tree-ferns are peculiarly adapted; and as they can be had of such varying proportions as to suit alike the most spacious as well as the most unpretentious of buildings, their value is greatly enhanced. For small conservatories the beautiful forms of the *Lomaria* are specially adapted.

The soil best adapted for Tree-ferns is a compost formed of peat, loam, leaf-mould, and sand. Such a mixture is used at the Royal Botanic Gardens, Kew. The ingredient should not be sifted; but the peat and loam, which should be fibrous, chopped into small pieces. The leaves should be used when only half decayed, chopped fine; for by using them before they reach the last stage of decay



DICKSONIA ANTARCTICA.

they are not so liable to render the compost too close in texture, and they are just as capable of nourishing plants at that stage as afterwards. Free drainage is indispensable; no class of plants suffer sooner from stagnation than Ferns, and none require more steadiness in the supply of water. If they are allowed to get dry, so that the fronds "flag," in nine cases out of ten they never rise again.—*Thomas Sampson's Seed Catalogue.*



WINTER-BLOOMING ORCHIDS.

IN the early part of January last we had an opportunity of inspecting a new Orchid-house that Mr William Bull, of the King's Road, Chelsea, S.W., has just erected for the growth of Orchids. "This house has been constructed so as to

embody many of the special features that have from time to time been suggested and described as to the manner in which an Orchid-house should be erected. In its present form it seems to be a model Orchid-house for amateur growers, and seems likely to prove an admirable house of its kind for nurserymen also. It is a span-roofed structure, 45 feet long, 15 feet 6 inches wide, and 9 feet high in the centre. The outer walls are 2 feet 6 inches high, and on this wall there is a 2-feet glazed frame on which the roof rests. Along the apex of the roof there is a good substantial wooden coping, under which a roller is fixed, which, when suitable materials for shading are fastened to it, will be used either for keeping out the bright rays of the sun in summer, or for keeping out frost in severe weather in winter. The house is divided into four compartments. The first is a lobby (5 feet by 4), which must be entered before reaching the other divisions; so that, let the condition of the external atmosphere be what it may, no cold draughts are admitted into the Orchid-house proper. The first division, after passing through the lobby, is 11 feet in length, and is intended for cool Orchids and flowering specimens. This is no doubt a great point in connection with Orchid culture, as not only do the flowers last much longer in such a structure, but their beauty is seen to greater advantage and much more pleasure by ladies than when the plants are regularly kept in the hot and damp atmosphere of the growing-house. The second division, which is called the East Indian House, is 19 feet 6 inches in length, and the third, or Cattleya House, is 20 feet long. Down the centre of the two latter compartments is an open tank, containing three hot-water pipes for giving off moisture. The tanks are kept filled by a pipe and taps from the reservoir outside. These pipes are also perfectly under control, as, by using valves placed in the cool-house, the temperature can be raised or lowered as required. At the end of the Cattleya House a compact and useful potting-shed, heated by hot water, is attached. This being entered from the house, greatly facilitates the operation of potting, &c. And here, again, is a precaution against draught. Under the floor of this shed is a spacious tank, which receives all the rain-water from the roof. Pipes are laid from the hot-water tank in the house to this cistern, so that warm or chilled water can be easily had when required, either for watering the plants or for any other purpose. The hot-water pipes for heating the houses are arranged along the outer walls, and provision is made for regulating the temperature in each house, by having separate stop-valves fitted to each set of piping. Ventilation has also been provided with the same care to prevent the introduction of cold currents of air. This is effected by having small apertures made in the outer wall, just below the heating medium, so that cold air, before passing into the interior, must first come in contact with the hot pipes, and so become somewhat warmed. The ventilation is effected simply by a sufficient number of small sliding glass-frames for the requirements of each house. Another important feature is the staging, which is open, both in the breadth that runs down the centre over the tanks and around the sides; the latter also, instead of being fixed close up to the wall, have a space of about 6 inches between them, for the heat to pass into that portion of the house which in most other erections is the coldest part—i.e., that portion of the stage nearest the glass. The stages being made open, the genial humidity which rises from the tanks is allowed to pass freely amongst the plants throughout the house, and the paths can be kept comparatively dry, which is a pleasure scarcely dreamt of where no tanks of this kind are provided."

For this capital description of the details of Mr Bull's Orchid-house we are indebted to the 'Gardeners' Chronicle;' but since this report was taken, Mr Bull has added one other improvement of considerable merit. Finding that the moist

atmosphere became condensed on the glass and rafters forming the roof, and then fell off in heavy drops, to the manifest injury of some of the plants, especially of those in flower, zinc gutters have been attached to each rafter throughout the house. The moisture on the glass invariably runs to one side or the other, and, falling from the rafter into the gutter, is by means of pipes carried down behind the side-stages into the tanks beneath the houses. Mr Bull deserves much credit for the admirable manner in which all the details of this excellently-constructed house have been arranged.

At the time of our visit the first division of the house was very gay with blooming Orchids. It was a bitter cold day when we went to Chelsea, a biting north-east wind prevailing; and yet, owing to the precaution of this lobby, but little of this found its way into the house as we entered it. Some lovely forms of *Lycaste Skinneri* first claimed attention. These admit of great variation, and some are very beautiful indeed: one named *Marginata* had a very rich lip, margined with white. There could also be observed a tendency to flower in pairs; in several instances twin-blooms were produced on one stem. *L. Barringtonia*, var. *grandiflora*, was also very fine, and was figured by Dr Hooker in his 'Botanical Magazine' in 1867. A plant of *Sophronis grandiflora* had six charming flowers finely coloured and fully expanded, with three buds yet to open. Some plants of *Lælia anceps* were very showy, the flowers borne on long stems, having terminal groups of two or three blossoms. One form had a fine dark lip, and darker sides to the throat than is usually seen, and a good blotch of yellow in the lip. This is to be called *L. anceps flavida*. Many plants of *L. anceps* were just coming into bloom. A little later in blooming is *L. furfuracea*, the buds of which were just on the point of opening. A somewhat rare and certainly beautiful species is *L. albida*, one specimen in particular being of fine development. The flowers are French white, marked with gold. One had larger flowers, which were tinted with buff. A variety of *L. albida*, named *grandiflora*, had the lip tinted with rosy lilac, which also stands out somewhat erect; it had more white than is usually seen on the sepals, which were also broader and stiffer in all their parts, and of better shape. Blooming *Odontoglossa*s were in strong force: such as *O. triumphans*, having a spike of six flowers of fine quality, and, it was said, not often seen with so many flowers at one time. *O. pulchellum*, var. *grandiflorum*, represented a fine large form, very handsome. The true form of *O. hystrix* was here—one having five expanded flowers blotched with chocolate on a pale lemon ground, the upper part broadly margined, and a pale sulphur lip much fringed. There were also several handsome varieties of *O. bicornense*—some pure white, others pale pink. One named *roseum* was quite distinct, and of a pale soft rose hue, the sepals broader, and the spots of brown on them denser than usual. Another named *grandiflorum* had a pale pink lip of unusual size, quite an inch in width, sepals chocolate, and bore a spike of sixteen flowers. Another variety, somewhat paler, had a spike of twenty-six flowers. As an illustration of branching orchids, one of the forms of *O. bicornense* had a much-branched spike. *O. luteo-purpureum*, one of the handsomest of the family, had two fine spikes, each containing eight attractive yellow flowers, barred and blotched with bronzy crimson. *O. Insleayi* presented several charming types differing in character; in some the chocolate marking was deeper than in others, and there was more yellow on the lip. One was named *splendens*: in this instance the sepals were very broad, and had pale-brown spots; the lip was of rich gold, with orange maroon spots. Another named *ampliatum* had a great breadth of sepals, the lip pale primrose. *O. cordatum* was also very handsome; *O. cristatum* was very pretty and distinct; and *O. maculatum* was just coming into bloom. *O. grande* was in nice bloom, though

it usually flowers in August and September from the young growth. One variety named *hyemalis* is said to bloom, as a rule, in December and January; and the great difference between this and the old form is this, that it flowers from old ripened wood. Of this there were several plants. The flowers of some were not yet opened, and this tendency to bloom late makes it the more valuable. A very scarce Orchid is *Oncidium nebulosum*, which, though not much of itself, is yet useful in a collection; one had a spike of flowers from 2 to 3 yards in length, and a shorter spike besides—the buds not yet expanded. Very pretty and curious was the somewhat minute *Oncidium ornithorynchum*, with five spikes of lilac-purple flowers, and a golden and somewhat jagged lip. The small flowers were not unlike a mass of minute birds, and were palpably scented like Violets. Of *Cattleyas*, *C. trianae* was in nice bloom; so was the beautiful *C. Wagneri*, pure white, with a faint tinge of lemon on the interior of the throat. *C. Dawsoni* was another handsome form, having delicate blush-white petals, the lip prettily fringed with soft purplish rose; and there was a fine piece of *Cattleya Loddigesii*, which, though old, has a very attractive appearance in a collection, the flowers white, tinted with pale violet, and generally seen deeper in colour than in this example. *C. Warscewiczii* had delicate blush-white flowers, the throat deep orange, the delicate lip handsomely fringed. There was also a good example of *Mesospinidium sanguineum*, having a long, thin, drooping spike, with small, deep, pinkish rose flowers, the white column affording a good contrast. The fine bold spikes of some of the *Calanthes* also made a charming display. All the varieties are exceedingly useful, and very beautiful as winter-blooming kinds, and are easily grown, and the flowers durable. *C. luteo-oculata*—the one generally found in collections—was very pretty, and had French-white flowers and yellow centres. *C. luteo-oculata nivalis* had snow-white flowers and deep orange centres, and was very fine and distinct. *C. Veitchii* was also very handsome, and had charming pale-rose flowers on a spike from 2 to 3 feet in length. The somewhat dull-looking yet handsome *Zygopetalum Mackayi* was in full bloom, and a variety named *major* represented a form which had the purple markings in the lip deeper and more distinct than is usually seen. *Limatodes rosea* and *L. rosea superba* were also effective; and so was *Barkeria Skinneri*, with its large spikes of violet-rose flowers. *B. Lindleyana* had the sepals and petals tinted with rosy violet, the lip fringed with purplish crimson, and white throat; the spike was from 2 to 3 feet in length, and had a terminal cluster of flowers. Near it was *Maxillaria luteo striata*, spotted and striped with buff and maroon. The curious *Cœlogyne brunnea*, with greenish yellow flowers, must also be noticed, and it is sure to be appreciated by the lovers of the curious in Orchids.

In the East India division were fine and healthy specimens of *Vandas*, *Saccolabiums*, *Ærides*, *Phalænopsis*, &c. Some of the former were very large, and of vigorous development. There was a splendid specimen of *Angræcum sesquipedale*, throwing up a fine spike of flowers, and an equally fine example of *Ærides Fieldingii*. In the way of imported Orchids, Mr Bull pointed out some six or seven plants of *Phalænopsis Schilleriana* which alone had been saved from a consignment of from 500 to 600 plants, showing that the importer runs a great risk, and also furnishing a valid reason for the high price this magnificent species commands.

In the end house was a fine specimen of *Arpophyllum giganteum*, nearly 2 feet through, and throwing up numerous flower-spikes; *Lælia purpurata*, very fine also; *Leptotes serrulata*, coming into bloom, and promising to flower freely; some very fine plants of *Cypripedium villosum*; *C. Lowi*, with a grand spike of

five flowers; *C. longifolium*, a very rare species, now named *C. Reichenbachii*; the pure white *C. niveum*, a very beautiful form, discovered by the Rev. W. Ellis, and not yet distributed; *C. Dayanum*, *C. caudatum* &c. *Cattleya bulbosa*, a very rare and beautiful species, had some handsome flowers of a peculiar mauve-violet hue; and there was a grand specimen of *Oncidium sarcodes*, said to be one of the finest specimens in Europe, formed of eleven bulbs, the strongest 3 inches in circumference and 6 inches in length. It had two spikes of partially developed flowers, each 2 feet in length. *O. Krameri*, with three flower-stems, began to bloom in August last, and still continued to produce flowers at the termination of the stem, the young bloom issuing from amid the decaying elements of the old one. *Lælia acuminata violacea* was also very handsome, and had a stem with a cluster of three violet-coloured flowers at the end of it.

At the warm end of this house was a nice collection of *Anæchtochili*, among which one of the most striking was *A. ordianus*, a new form, having bright deep green leaves handsomely reticulated with bright gold.

In one of the plant-houses Mr Bull had a very fine lot of *Cyclamen Persicum*, some of them finely coloured. They were in 32-pots, large healthy plants and fine masses of bloom. They were raised from seed sown in July 1868, and came into bloom in October last. A fine compost for the *Cyclamen* is one formed three-fourths part of yellow loam and the other fourth leaf-mould and sand; dung should not be used, as it encourages the worms to work so much in the soil.



NEW PLANTS OF THE PAST MONTH.

Of these, Orchids naturally enough form the largest proportion at this season of the year. Foremost must be placed the magnificent example of *Oncidium splendidum*, exhibited by Lord Londesborough. The sepals and petals are somewhat small, and are brown, with thin bars of yellow running across them, and a very large and conspicuous bright yellow lip of great beauty. It is not too much to state that it is one of the finest species in the genus. It deservedly obtained a first-class certificate, and it was stated that it was the first time it had ever been exhibited. *O. leopardinum*, from the same exhibitor, received the same award. It is a pretty Peruvian species, with yellow and deep chestnut-brown flowers. Messrs Veitch & Sons have produced *Vanda cœulescens*, the flowers of which, though small—and there were only two on the flower-stem—were very pretty; colour, pale-blue, with a white lip. A very beautiful form of *Lycaste Skinneri alba* has been produced by the same exhibitors, and has been termed the most beautiful *Lycaste* ever seen. In the way of varieties of *Cattleya Trianae*, Mr Wilson, gardener to William Marshall, Esq., Enfield, received first-class certificates for cut specimens of the following: *Io*, large deep-blush flower, with purplish rose lip, paler at the edges; *Penelope*, warm lilac, with a broad lemon-coloured bar on the lip; *Atlanta*, pale rose, with deep rich purple lip; and *Venus*, resembling the latter in colour, but

larger, and tinted with orange in the upper part of the lip. The same award was made to *Cattleya Trianae* Lawrenciana, a very beautiful and deep rich-coloured variety, from Mr Lawrence, gardener to Bishop Sumner (ex-Bishop of Winchester).

A first-class certificate was awarded to a fine-coloured variety of *Cyclamen Persicum*, named *Kermesinum*, of a rich carmine-rose hue, the flowers of fine substance, sent by Mr J. Welch, Parkfield House, Hillingdon. Mr Stevens, of Ealing, also produced a very fine batch of seedlings, some of them remarkably high-coloured, and at the same time quite varied in hue. Generally speaking, this strain had small, rounded, and peculiarly shining leaves, some very handsomely marked.

A second-class certificate has been awarded to *Cerasus Laurocerasus rotundifolia*, a handsome variety of the Laurel, shown by Mr William Paul, Waltham Cross. The plant was rather small, but if it retains its close compact-growing habit, it will be acceptable as an improvement on existing kinds. Also to *Libonia Penrhosiana*, a hybrid raised between *Libonia floribunda*, also known as *Abutilon vexillarium*; and *Sericographis Ghiesbreghtiana*, the last named being the seed-parent. From this cross three varieties were obtained, of different shades. The flowers of the one selected for an award have the yellow mouth of the *Libonia* and the scarlet tube of the *Sericographis*, though not so bright, while the leaves are larger than those of the *Libonia*, and rather smaller and of a darker green than those of the other parent. This makes a capital winter-blooming plant for this season of the year. It was shown by Mr Ismay, gardener to the Hon. W. O. Stanley, Penrhos, Holyhead.

In the way of hardy ornamental shrubs, Mr A. Waterer, Knaphill Nursery, Woking, had *Cupressus Lawsoniana erecta viridis*, a very striking and handsome variety, almost as upright in its growth as an Irish Yew or Eastern *Arborvitae*, which promises to be valuable in gardens; also *C. Lawsoniana gracilis*, of a most graceful drooping habit, and well named in consequence. Both these received first-class certificates.

Last year, Mr William Paul produced a snow-white single *Primula*, the trusses of bloom borne on red foot-stalks, the leaf-stalks of the same colour. This has just been produced in a double form by Messrs F. & A. Smith, Dulwich, and named by them *Purity*. The flowers are of large size and very handsome. The same exhibitors had a great curiosity, in the form of a small plant of a seedling single *Primula Sinensis*. One half of the plant had red leaf-stalks, and produced a truss of rosy-purple flowers; the other half had white leaf-stalks, and bore a truss of white flowers.

R. D.

GARDEN RECORDS.

NO. III.

MESSRS SALTER & SON, VERSAILLES NURSERY, HAMMERSMITH,
LONDON, W.

THE annual display of Chrysanthemums made by Messrs Salter & Son has now become an established floral institution of the metropolis, for it is a show of no mean order. Year by year it becomes more extensive, and at the same time more varied in its details. No description we can give will do due justice to this admirable winter-garden, when seen about the second week in November, just as autumn is merging into winter ; and when

“The flush of the landscape is o’er,
The brown leaves are shed on the way.”

It is an annual custom of the proprietors of the Versailles Nurseries to arrange this show in two long narrow houses, connected together, and forming a continuous walk. In the first of these two houses there was to be seen, ranged along the back of it, a wondrous bank of Chrysanthemums of unusual fulness of beauty, and of varied hues. This bank was so arranged as to present an undulating margin, and along the front of this was carried a neatly-gravelled narrow path, slightly winding, the which at intervals opened out and embraced a small circular bed ; while along the front of the house was another bank of Chrysanthemums and other plants. The second house had at the back of it a further bank of Chrysanthemums, mainly of the new Japanese varieties. So much for a general description of the outline of the arrangement.

It is always interesting to note how nicely many things are used so as to secure pretty bits of work within the houses. For instance, Messrs Salter & Son are particularly strong in that class of useful ornamental plants that comprises Echeverias, Sedums, Sempervivums, and many others allied, or nearly allied, to them. Especially are these used to construct charming pieces by which to give points of contrast to the numberless blooms of the Chrysanthemums, at the same time showing their special adaptability to serve such purposes. Immediately on entering the first house, the view of the Chrysanthemums was seen to be to some extent obstructed by a raised bank carpeted with patches of various of the dwarf-growing Sedums and Saxifrages, surmounted by a fringe of silvery-foliaged and other plants, while about on this bank were grouped examples of Echeveria metallica, *E. secunda*, *E. secunda glauca*, *E. sanguinea*, the curious alabaster-like *Pachyphiton bracteosum*, one of the most curious and effective of the ornamental succulents, and others of equal value. On the left hand was a very pretty piece of mosaic work, formed of similar agents, and giving a raised bank in the form of a triangle. In the bed of this triangle, which was raised about 9 inches from the ground, were three small circular designs, a larger one, and two of smaller size, one on either side. The diameter of the largest design was from 3 to 4 feet. In the centre of this one was a good plant of *Echeveria metallica*, round this a ring of six plants of *E. rubra* or *sanguinea* ; and then a ring of *Pachyphiton bracteosum*. The surface beneath these succulents was carpeted with *Saxifraga hypnoides minor*. Round this central design was a circle of *Sempervivum tectorum* ; then a band of the silvery grey *Sedum glaucum* ; then another circle formed of *Sempervivum hirtum* ; then a band of the curious dwarf *Mentha corsica* ; and lastly, an outer circle of *Echeveria secunda glauca*. The two smaller

side circles were similarly planted—viz., a plant of *Echeveria sanguinea* in the centre, with some medium-sized plants of *Echeveria secunda glauca* round it, and encircled with *Sempervivum tectorum* as before ; the whole carpeted with *Saxifraga hypnoides minor*, and outwardly edged with *Echeveria secunda glauca*, as in the case of the centre grouping. Above this excellent piece of mosaic was a fringe of plants forming a raised background : first came *Adiantum cuneatum* ; then a line of handsome forms of *Beta chiliensis* ; next this a line of the silvery *Centaurea candidissima* ; and behind, in the remote background, a mixture of large-growing Ferns, standard plants of *Centaurea gymnocarpa*, and *Tanacetum elegantissimum*. Another interesting feature in this house was a plant of *Dahlia imperialis* growing in a pot, and about 7 feet in height. This Mr Alfred Salter had grafted on a stock of one of the Lilliputian varieties in the previous spring, and had quite succeeded in his design—that of reducing the height of this grand autumnal-flowering species, while a more branching habit had also been imparted. There were a great many buds on the plant on the occasion of our visit, but whether there would be sufficient warmth in the house (there not being the aid of artificial heat) to produce flowers at that time of the year was a matter for doubt.

The lovers of the *Chrysanthemum* look mainly to Messrs Salter & Son for the production of new varieties, or, at least, for keeping up the supplies of new flowers annually distributed. We saw these new flowers, and the following are the descriptive notes we made of them. We commence with the new large-flowering varieties as follows : Beauty of Stoke, amber-yellow suffused with red, which deepens in hue as the flowers age—large, full, and finely incurved ; Duke of Edinburgh, rosy lilac, with paler centre—very large and finely incurved ; Globosa, dark Indian red, with very broad evenly incurved petals—compact habit and of unusual dwarf growth ; Marginata, an anemone-flowered variety, colour rosy lilac, the guard petals edged with a deeper colour—very novel ; Meyerbeer, pale rosy chocolate, lighter towards the centre, remarkable for its very broad incurved petals ; Miss Hope, delicate lilac, paling off to white in the centre—a fine incurved flower ; Mrs Wreford Major, pale ground, with lines and dashes of dark rose, of compact growth and dwarf habit—an excellent variety for the decoration of the conservatory ; Norma, waxy white, with short stiff petals, flowers very double—habit exceedingly dwarf ; Ondine, cream, tipped with rosy lilac, and buff centre—finely incurved ; and Princess Louise and Virginalis, both anemone-flowered varieties, the former with pale-blush outer or guard petals, with a high centre of a pale lilac hue ; the latter white, and somewhat late in blooming.

It is very difficult indeed to describe that curious, but deeply-interesting group of *Chrysanthemums*, the Japanese varieties. There are so many different types of flowers, that though attempts have been made to classify them, the tendency to variation on the part of many of the new flowers seems to upset what had been so well done. Although of a distinct type from the *Chrysanthemums* in general cultivation, no difference of soil or treatment is necessary ; a warm situation and good management is all that is required to secure a succession of flowers from November until January or February. As a general rule they bloom later and remain longer in bloom than the ordinary kinds, and they serve the important end of keeping our conservatories gay at a season of the year when flowers are very scarce. But to our descriptive notes of the new varieties :—Aurora, bright orange yellow, the flowers composed of a mass of straight, sword-like petals ; Chang, purplish red, the outer surface pale amber, petals very long and curiously twisted, flowers of great size ; Colonel Henery, deep golden yellow, the flowers composed of long, stiff, and somewhat narrow petals : this is regarded as one of

the finest varieties ever raised ; Chinoise, chestnut red, with yellow tips, flowers very large and with a fringed appearance ; Emperor of China, blush, the centre rose-coloured, and tinged with yellow, the exterior florets are quilled, the rest expand, and curl inwards, flowers very large ; Gloriosa, the flowers composed of long twisted florets, forming a flat head, colour rich golden yellow mixed with red, but becoming nearly altogether yellow as the flowers age ; Helen M'Gregor, rich deep chestnut red, the flowers composed of long, loose, threadlike petals ; Mandarin, canary yellow, petals very broad and much curled ; Meg Merrilees, pure white with sulphur centre, the base of the petals take a tubular shape, but become flattened at the ends and much jagged, and so form large and somewhat grotesque flowers ; Negro, very dark maroon, a fine hue of colour, the petals much curled ; Rob Roy, purplish red on the upper surface, the under surface amber, and as the flowers have a curiously twisted and confused appearance, both colours are presented to the eye in a mingled form ; Sultan, clear rosy lilac, the under surface of the petals silvery lilac, the flowers very large ; Sol, clear wax-like yellow, with long, straight, ribbon-like petals, very showy ; and Viceroy of Egypt, bright rosy lilac, the backs of the petals white, also very long and broad, and with an arched appearance. Not a single new Pomponé variety appears to have been raised for distribution this spring.

Of the Japanese varieties sent out in the spring of 1869 we can heartily commend the following :—Hero of Magdala, blood red, the reverse of the petals orange buff ; James Salter, clear lilac or mauve ; Meteor, bright golden yellow changing to orange ; Regalia, orange, striped with bright red ; and The Mikado, golden yellow. The foregoing are not only of very fine quality, but varied, and novel. Of the large-flowering varieties sent out at the same time, we must commend Beethoven, bronzy red, when fully incurved presenting a golden surface ; Golden John Salter, golden yellow, changing to amber, a sport from the reddish cinnamon-coloured John Salter ; Orange Annie Salter, bright orange, a sport from the yellow variety under that name ; Pink Perfection, soft pink, very fine indeed ; Plenipo, rosy purple ; Princess Charlotte, a rosy blush-coloured, anemone-flowered variety ; Rotundiflora, pearl white, changing with age to pale lilac ; and Stellaris, amber, with a distinct yellow tip.

For the guidance of those of our readers who may be contemplating making up a collection of Chrysanthemums of the older kinds, the following selection from the large-flowering varieties may be relied on :—Alarm, violet crimson ; Aurea Multiflora, pure bright yellow ; Bella Donna, delicate lilac ; Beverley, ivory white ; Bronze Jardin des Plantes, bronze orange, with yellow centre ; Enamel, delicate enamel white ; Fingal, rosy violet, a fine colour ; General Slade, Indian red, tipped with bright orange ; Golden Beverley, golden canary ; Jardin des Plantes, deep gold ; John Salter, reddish cinnamon ; Julia Lagravere, dark shining crimson ; Lady Talfourd, delicate rosy lilac ; Mrs G. Rundle, white, a beautiful flower ; Ossian, rose, very fine ; Prince Albert, bright crimson ; Prince Alfred, rosy crimson, very fine ; Prince of Wales, dark purplish violet ; Princess Beatrice, rosy lilac, with silvery shade ; Purpurea Elegans, rich purplish violet, very fine ; Sanguinea, light reddish crimson, a fine hue of colour ; and Virgin Queen, snow white. This collection should also include Fleur de Marie, a very fine white anemone-flowered variety.

Of the Pomponé varieties, the following will be found a selection of eighteen of the best kinds :—Adonis, rose and white ; Andromeda, cream, with brown points ; Capella, dark reddish chestnut ; Diana, pure white, a late-blooming variety ; Fairest of the Fair, delicate lilac, with silvery tips, one of the best ; Florence, dark cherry, very fine ; Jessie, orange amber ; Lizzie Holmes, canary

yellow, very fine; Madame Eugene Domage, pure white; Madame Fould, cream colour, very fine; Miss Julia, dark chestnut; Mrs Dix, blush, bordered with rose; Prince Victor, bright reddish maroon, very showy; Rose Trevenna, rosy blush, very fine; Saint Michael, very bright gold, extra fine; and the following anemone-flowered varieties:—Ceda Nulli, white, with brown points; Golden Cedo Nulli, golden canary; and Mon. Astie, golden yellow.

In addition to Chrysanthemums, and the ornamental succulents before alluded to, Messrs Salter & Son have a large collection of hardy ornamental plants with variegated foliage, and herbaceous and Alpine plants, many of which can be seen growing in the borders about the nursery; also a fine and varied collection of varieties of Phlox decussata, an unusual collection of showy varieties of Iris Germanica, a most handsome and valuable tribe of hardy herbaceous plants, and of which they catalogue something like one hundred sorts; a very large collection of double Pyrethrums, a flower that has been much improved by Mr Salter during the past few years; the collection at the Versailles Nursery is well worth an inspection when they are in bloom during July and August: also Pæonies, Pentstemons, &c.

In several parts of the grounds there are to be seen all the year round patches of carpet-work formed of the dwarf-growing Sedums and Saxifrages, &c., from which a capital idea can be gleaned of their great usefulness when employed in such a way.

For many years Mr John Salter, the senior member of the firm, was established in business at Versailles in France. At the outbreak of the revolutionary movement of 1848 he had to relinquish his business, and came to England, settling down on the spot where by his subsequent doings he has achieved such a wide reputation. He has also published a work embracing a complete history of the Chrysanthemum, from its first introduction into England in 1764 until the present time.



THE AMATEUR'S GARDEN.

[It has been suggested to us by more than one correspondent, that we should devote a portion of each number to the more immediate requirements of our non-professional readers who do not employ a gardener, and therefore come under the denomination of amateurs. With this class, gardening is a labour of love generally, and no small expense is often incurred in trying to make a small garden a source of great enjoyment. *When and how* to do things is often a question occurring to the amateur, and with the view of assisting them, we have placed this subject in the hands of one who has had many years' experience of their wants, and who will be glad to answer any inquirers through us, and give any information that may be thought worth asking for.—EDS.]

One of the most important points to be considered, is *the formation* of beds and borders about villa residences, when the amateur cultivator wishes to grow a few things well. This is especially the case in large towns, where soil is often scarce and dear, and labour also. I have noticed in large midland towns, and about London also, that the formation of a villa garden is often left to the builder or a garden contractor, and the smallest cost is the greatest consideration. In

many of these instances, it would positively be cheaper for the tenant to make the garden at his own expense, than to have it done in this rough-and-ready way for him. I shall not go further into this matter here than to say, that if gardening is to be carried on with any degree of pleasure, drainage, if in a damp or low-lying locality, must be secured, and a friable and suitable soil procured. Should this be of a cold retentive nature, as it is in some cases, add plenty of coarse river sand, fresh turfy soil, burnt earth, leaf-soil, and similar ingredients. I have found decayed Hops a valuable material for this purpose, and have recently restored a worn-out town garden by adding plenty of these coarse river sand, and a little fresh earth. Fresh Hops from the brewery can be procured at a very small cost, and, when *Chrysanthemums* and other things are grown in pots, form a good plunging material for them, or they can be used for mulching beds during the summer, and digging or forking them in winter.

Another point which often puzzles amateurs in stocking a villa garden with trees and shrubs, is, "what are the most suitable to plant?" I have repeatedly seen the most unsuitable plants, such as Hybrid Rhododendrons, choice Coniferæ, Sweet Bays, *Laurustinus*, *Arbutus*, &c., planted in the gardens of large manufacturing towns, where smoke rendered gardening an unsatisfactory pursuit. These were often obtained from warmer districts and more genial soils, and the failure consequently rendered more probable. It will be as well to say here, that it is wise to get your trees and shrubs from a locality where the situation and soil are similar to those in which they are to be planted. Trees and shrubs removed from the south and midland districts of England do not generally do so well when planted in many districts of the north, especially near smoky towns, as those procured from the neighbourhood. I purpose, as I go along, giving lists of a few suitable things for smaller gardens; and as this is the season for planting trees and shrubs, I will give a list of a few which may be safely selected from.

CONIFERS.

Abies Canadensis (the Hemlock Spruce), a very graceful-growing plant, but requires a dry sheltered situation.

Abies Douglasii.

Biota (or *Thuja*) *orientalis* (the Chinese Arborvitæ), a close-growing pyramidal shrub, but thrives best in a sheltered situation.

Cedrus Atlantica (the Cedar of Lebanon of Mount Atlas), a handsome tree for a lawn when there is plenty of room.

Cedrus Deodara.

Cupressus Lawsoniana. Several pretty forms of this most valuable plant can be selected in any nursery; and it thrives in almost any situation, even in the smoke of large towns.

Cupressus Nutkaensis—or, to use its more generally known name, *Thujopsis bore-*

alis—is another very ornamental and useful plant which should be in every pleasure-ground.

Juniperus Goviniana is a fast-growing, ornamental, spreading Cypress, which requires a sheltered situation and milder climate than many other Conifers.

Juniperus Chinensis (the Chinese Juniper) is very hardy, and in spring the inflorescence gives it a very ornamental and distinct appearance.

Picea amabilis, a very fine ornamental plant.

Picea bracteata, do. do.

Picea Cephalonica, compact-growing and very ornamental; not a rapid grower.

Picea lasiocarpa, very fine and distinct.

Picea nobilis, handsome and very hardy; the underneath part of the foliage silvery.

Picea Nordmanniana, very hardy, and a fine ornamental tree, the foliage of a rich deep-green colour.

Pinus Austriaca. We mention this particularly where shelter or a blind is wanted, and for exposed situations. It is best described as a very robust-growing Scotch Fir.

Pinus Cembra, silvery green foliage, the tree of a conical form; not suited to very cold damp localities.

Pinus insignis. This handsome dark-green-leaved Pine thrives best in sheltered and tolerably dry situations.

Pinus peucecetis, a beautiful plant.

Taxodium distichum (the deciduous Cypress); the beautiful, fine, graceful foliage of this plant makes it one of the most ornamental for summer decoration.

Taxus (or Yew) *Canadensis*, the handsomest form of the common Yew, and the Irish, variegated, are useful; the latter indispensable.

Thuja gigantea, a noble Arborvitæ.

Thuja Menziesii, generally known as Lobbi, with rich green spreading branches, which assume a metallic lustre as autumn comes on.

Thuja dolabrata, a distinct and unique Conifer for sheltered places, but large plants not generally obtainable. Those who have seen good-sized plants know its rare beauty.

Widdingtonia gigantea. Wants room and shelter.

The list of Conifers could easily be extended, but as we write for small gardens chiefly, we have enumerated the most desirable. These can easily be added to by visiting any nursery of note.

ORNAMENTAL TREES AND SHRUBS.

Acer (Maple) *Colchicum rubrum*. The foliage of this ornamental plant assumes a deep reddish tinge in the autumn.

Acer negundo variegata (the variegated Norway Maple), a most beautiful plant, the foliage green, with a broad margin of white. Wants shelter and liberal growth.

Castanopsis Hippocastanum coccinea (the scarlet-flowered Horse-Chestnut).

Hamamelis, single-flowered.

Hamamelis, double-blossomed in variety.

Andromeda Catesbaei, an evergreen shrub, with handsome foliage, and white spikes of flowers produced at the end of each leaf.

Andromeda floribunda, evergreen, with white flowers; beautiful.

Andromeda pulverulenta and other kinds, deciduous, all more or less beautiful.

- Andromeda Mariana*, foliage rich red in the autumn.
- Arbutus*, the red-flowered, scarlet-berried, and other kinds.
- Aucuba*. All the varieties do well in smoky districts; in fact, it is particularly a town plant. Some of the new kinds are very ornamental.
- **Azalea pontica* (yellow), *glauca* (white and fragrant), and many others. Especially what are called the Belgian varieties are very beautiful, but all are deciduous.
- Berberis aristata*, prominent spines, handsome.
- Berberis Darwinii* should be in every garden, rich dark-green foliage, and golden racemes of flowers, very beautiful. There are several other handsome kinds which are little known.
- Birch, weeping, silver-barked and cut-leaved, with other varieties, all very ornamental.
- Buddlea globosa*, a fine free-growing plant for warm districts, producing rich orange-coloured globe-shaped flowers.
- *Hardy Heaths, almost all of which are beautiful.
- Chestnut (Spanish), *asplenifolia* is a very fine ornamental plant; so also are *Aurea variegata* and *laciniata*.
- Ceanothus azureus*, pale blue, and other kinds, all valuable against walls in warm sheltered places.
- Cerasus padus* (the Bird Cherry), very ornamental tree in spring, with white blossoms.
- Cherry, double-blossomed, very showy.
- Cistus glutinosus* (the Gum Cistus), an evergreen shrub, requiring a sheltered situation or against a wall; produces an abundance of large showy white flowers.
- Cornus mascula variegata*, handsome foliage.
- Cotoneaster Simonsii*, a handsome evergreen shrub, with large red berries winter; a very effective plant for covering a wall.
- Cratægus* (Thorns). Some of these, such as the scarlet and double pink flowers are well known, but there are other kinds equally beautiful for the fruit, while some have fine bold spines.
- Cytisus sessilifolius*, a very pretty shrub, with yellow flowers.
- Daphne Mezereum*, pink and white.
- Daphne pontica*, evergreen, pale yellow and fragrant.
- Deutzia gracilis*, white, compact growing.
- Deutzia crenata fl. pleno*, white and pink, strong grower.
- Escallonia macrantha*, an evergreen, with a profusion of rose-coloured blossoms forms a good bush or an excellent plant against a wall.
- Eurybia Gunniana*, a charming shrub, with an abundance of white flowers spring, very handsome.
- Fagus* (Beech). Several ornamental kinds, particularly the varieties of purple-leaved, Fern-leaved, and *Cristata*.
- Fraxinus* (Ash). Several very ornamental kinds, especially the golden variegated gold barked, and many others with fine and distinct foliage.
- Genista triquetra*, a low-growing shrub, with yellow Pea-shaped flowers, blooms profusely, and excellent also for rockwork.
- Gleditschia tricanthos*, a very ornamental tree, with handsome foliage and spines.
- Halesia tetraptera* (the Snowdrop tree), a very beautiful spring-blooming tree, seldom seen, but should be in every garden.

- Hedera (Ivy).** Several ornamental kinds, some of which have variegated leaves, all good for rockeries, and many of them can be trained as compact bushes.
- Hibiscus Syriacus** (the *Althæa frutex*). Some of these are very beautiful, and they are seldom seen in gardens, but should be universally cultivated; all deciduous shrubs.
- Ilex (Hollies).** Amongst variegated, the Golden Queen is the best gold variegated, and Silver Queen and Handworthensis are the best white-margined kinds. "Moonlight" is a distinct kind, dull yellow and green foliage, and worth growing. There are several green-leaved kinds which should be grown.
- ***Kalmia latifolia**, an evergreen shrub, with pink and white wax-like flowers.
- Leycesteria formosa**, a grand ornamental shrub, producing purple berries in the winter; requires a little shelter.
- Ligustrum japonicum** (the Chinese Privet), evergreen.
- Ligustrum japonicum**, variegated.
- Liquidambar styraciflua**, a deciduous tree, the foliage of which changes to a bright red colour in the autumn.
- Liriodendron tulipifera** (the Tulip tree), so called from its Tulip-like flower. The foliage is very distinct in form to that of any other tree, and is very ornamental.
- Magnolia conspicua**, a deciduous shrubby tree, with pure white flowers.
- Magnolia Soulangiana**, also deciduous, the flowers white and rosy purple.
- Magnolia grandiflora**, evergreen, with large handsome foliage and large white flowers; does best against a south wall in a good sheltered warm situation.
- Mahonia aquifolia**, does well almost anywhere.
- Mahonia Bealii**, and other varieties with fine foliage, thrives in sheltered situations and good soil.
- Paliurus aculeatus** (Christ's Thorn), a very ornamental deciduous shrub with a profusion of thorns.
- Pernettya mucronata**, and other kinds, all low-growing evergreen shrubs, with bright-coloured berries in the winter; most desirable plants, and suitable for rock work.
- Populus** (Poplar). The white-leaved and aspen, also other ornamental kinds.
- Pyrus**. Several kinds of these ornamental trees, which could be selected in nurseries.
- Quercus** (Oak), scarlet-leaved, evergreen, Pannonica, with very fine foliage, and several other fine ornamental kinds.
- Rhododendrons** in variety.
- Ribes speciosum** (flowering Gooseberry), rich scarlet flowers.
- Salix** (Willows), several very ornamental-leaved as well as weeping kinds.
- Spiræa ariæfolia**, *callosa*, *Lindleyana*, *Douglasii*, and others, all deciduous, and more or less beautiful.
- Tilia** (Limes), several ornamental-leaved kinds. The common Lime is one of our finest garden trees.
- Ulmus** (Elms). Several fine varieties for foliage. These all do well in small town gardens.
- Weigelia**s. Several pretty varieties.
- Yuccas** (Adam's Needle), especially *filamentosa*, *gloriosa*, and *recurva*.

Those marked thus * require peat in the soil in which they are planted.

QUIS?

(To be continued.)

HORTICULTURAL EXHIBITIONS.

As yet, the Royal Horticultural Society is alone in the field; but with the month of March the Royal Botanic Society will commence a series of five exhibitions announced. The meeting of the Royal Horticultural Society, on the 19th of January, brought together a most attractive display of Orchids, and foremost were some fine examples from the gardens of Lord Londesborough, at Grimston Park, comprising a noble specimen of the handsome *Lælia Anceps Barkeri*, with upwards of twenty fine spikes; *L. furfuracea*, a fine Mexican variety, somewhat difficult to cultivate, with one good flower; *Odontoglossum Alexandræ*, a noble spike, with ten large and finely developed flowers; the curious though pretty *Oncidium Kramerianum*, and *O. leucochilum*. From Mr Parsons, The Gardens, Danesbury, came a fine specimen of the dwarf *Odontoglossum Rossii*, with six fine white and purple flowers. Mr B. S. Williams finished a large specimen of *Ansellia Africana*, with five fine spikes; *Angræcum sesquipedale*, with four superb flowers; *A. eburneum virens*, a very healthy robust specimen, with four nice spikes, and some fine cut flowers of various *Lælias*, &c. Messrs Veitch & Sons also had some grand things, such as *Barkeri Skinneri*, with thirteen fine spikes of warm rose-coloured flowers; the new *Cypripedium Harrisianum*, *Saccolabium giganteum*, with two handsome spikes; *Lælia anceps*, with ten fine spikes, &c. &c. *Cyclamens* and *Primulas* were furnished by Mr Wiggins, of Isleworth, both very fine, the last containing some fine striped flowers of great beauty; and a few other things bright and pleasant as these were also present.

Prizes were offered for nine Ivies in pots and nine hardy Conifers. Of the latter, the Messrs Veitch were the only exhibitors. Their collection comprised well-furnished specimens of *Thujopsis dolabrata*, *Picea bracteata*, and *P. magnifica*; *Retinospora plumosa*, *R. obtusa nana aurea*, a small plant of stunted growth, but pleasing in colour, and the graceful drooping *R. filifera*; with a fine specimen of the handsome *Cryptomeria elegans*. In the class for Ivies the competition was very good, considering that this group of plants is a comparatively new one for show purposes; now, however, that the growers have taken them in hand, judging from the neatness of the specimens shown, there is no reason why the boldest foliaged variegated forms should not be improved, and grown for the decoration of cool greenhouses, and indoors in winter, and for terraces in summer, for which purposes they are eminently adapted. The first prize was taken by Mr Turner with compact pyramidal specimens of *H. Algeriensis*, *H. grandifolia (canariensis)* *latifolia maculata*, a large-leaved showy kind; *H. grandifolia (canariensis)* *arborescens*; and of small-leaved varieties, *H. Helix major* and *H. Helix minor*; *H. elegantissima*, silvery variegated; *H. lobata major*; *H. marmorata minor*, and *H. lucida*; all very healthy and well furnished specimens. Mr W. Paul was second with *H. Rœgneriana*, a dark leathery-leaved variety; *H. Rœgneriana arborescens*, a shrubby-growing kind, with bright dark-green foliage; *H. arborescens baccata lutea*, in fruit; *H. canariensis follis aureis*, &c. Messrs E. G. Henderson & Son also staged a nice group of smaller plants than the above, to which an extra prize was given; also a large and beautiful collection of green-leaved and variegated forms, which received a special certificate.

Several prizes were offered for culinary Apples and Pears. The competition in the class for the former was very spirited, good collections being shown by Mr Gardiner, gardener, Eatington Park; Mr Parsons, gardener, Fairlawn Acton Green; Mr Parsons, gardener, Danesbury Park; and Mr Earley, gardener, Digs-well Park, &c. Mr Parsons, Danesbury, took the first prize with fine dishes of

Blenheim Orange, Burr Knot, and Wellington; and Mr Earley the second, with excellent examples of Golden Noble, Yorkshire Greening, and the Gooseberry Apple. Mr C. Ross, gardener to C. Eyre, Esq., Welford Park, Newbury, was first in the class for Pears, with very handsome specimens of Uvedale's St Germain and Catillac; Mr Hobbs, Thames Bank, Great Marlow, coming in second, also with large and fine examples of Catillac. Mr Gardiner, gardener, to Sir T. Dyke Ackland, Bart, Killerton, Devon, contributed good specimens of Verulam, Vicar of Winkfield, and Bellissime d'Hiver, an excellent stewing Pear, not generally cultivated. From Mr Meredith, The Vineyard, Garston, came a splendid basket of Grapes, consisting of Black Alicante, Muscat of Alexandria, and Lady Downes Seedling, all large and in fine order; a special certificate was awarded. The same award was also made to some finely-flavoured and well-kept Muscat of Alexandria Grapes, sent by Mr Fowler, gardener to the Earl of Harewood, Harewood House. They were cut from the old Vine at that establishment, which last season produced over four hundred bunches, and were fully ripened in September. To Mr Paul, Waltham Cross, a special certificate was also awarded for a beautiful collection of Apples. From Mr Gilbert, gardener to the Marquis of Exeter, came a good specimen of the smooth-leaved Cayenne Pine-apple, which had been produced by a plant grown on the "cutting-over" principle. Mr Sharpe, Tanglemere, Guildford, sent a fruit of a Pine received from Bahia, which was sound and juicy, and much better in flavour than imported Pines usually are. Mr Miles, gardener to Lord Carington, sent a dish of the fruit of *Solanum betaceum*, known in gardens as S. Guisados, which was said by Mr Berkeley to be good when cooked; also some very good home-grown Lemons. Messrs Carter & Co. exhibited a collection of English and new American Potatoes, and several varieties of Beet.

The meeting of the Royal Horticultural Society, held on the 16th of February, was again enlivened by some valuable contributions of Orchids. Foremost was a fine group from Lord Londesborough, which Mr Denning, the gardener at Grimston Park, sends through to London in a van heated with hot water. There were cut specimens of *Phalænopsis grandiflora*, *P. Schilleriana*, and a very fine variety of the latter; also a very fine plant of *Dendrobium speciosum*, with fifteen spikes of flowers; several plants of *Odontoglossum Alexandræ*, *Cœlogyne cristata*, some beautiful *Cattleyas*, *Oncidium nebulosum*, *Brassavola glauca*, &c. Mr Thomas Burnett, gardener to W. Terry, Esq., Fulham, had a magnificent plant of *Cœlogyne cristata*, densely covered with beautiful white blossoms, and finely grown. Messrs Veitch & Son had a fine group also, comprising *Odontoglossum Rossii*, *O. cervantesii*, *O. cordatum*, *O. cucullatum maculatum*, a small but very handsome Orchid; the charming *Oncidium Phalænopsis*, *Nasonia punctata*, with two small orange-red flowers, not unlike those of a minute unexpanded *Sophronitis*; a fine spike of *Dendrobium cucullatum giganteum*; *Lælia purpuracea*, *Dendrobium heterocarpum*, *D. crassnode*, *D. moniliforme*, and *D. nobile*.

Prizes were offered for six Chinese Primulas, distinct. The best were shown by Messrs F. and A. Smith, who had one single and five double kinds, the last including two fine carmine-coloured varieties. The class for three *Dielytras* in bloom did not fill; and in the class for six *Lycastes*, Messrs Veitch & Sons were the only exhibitors, having among them the beautiful *Lycaste alba*, the flowers creamy white, with a yellow throat, each plant having from eight to twelve flowers.

Two prizes respectively of £3 and £2 were offered by the Rev. George Kemp, a member of the Fruit Committee, for the best winter dessert of Apples and Pears, 3 dishes of each. Mr Parsons, Danesbury Gardens, Welwyn, was first

with Flat Nonpareil, Wyken Pippin, and Cockle Pippin Apples; and Nep Meuris, Josephine de Malines, and March Bergamot Pears, the flavour of Pears being very fine. Mr Garland, The Gardens, Killerton, Devon, was second with Sturmer Pippin, Royal Russet, and Hubbard's Pearmain Apples; and Wir Nelis, Glou Morceau, and Bergamotte Esperen Pears. The Society also offered prizes for the best three dishes of dessert Apples, and also of dessert Pears. C. Ross, The Gardens, Welford Park, Newbury, was first with Apples, having Scarlet Nonpareil, White Nonpareil, and Carraway Russet; 2d, Mr M. S. The Gardens, Stourton Park, with Margil, Ribston Pippin, and Aromatic Russet. The best three dishes of Pears came from Mr Wells, Holme Lacy Gardens, who had Beurré Rance, Bergamotte Esperen, and Bergamot Hendrick. Mr Garland was second with winter Nelis, Bergamotte Esperen, and Beurré Rance. Mr Meredith Garston, sent some capital Black Alicante, Muscat of Alexandria, and Lady Downes Grapes; and an immense bunch of Child of Hale, raised by crossing Syrian with the Muscat of Alexandria, but closely resembling the Syrian appearance.



GOOSEBERRY AND CURRANT BUSH PRUNING.

My experience of cottage-gardens in this neighbourhood leads me to believe that their owners generally understand the cultivation of these fruit-bushes very well, with the exception that they are too negligent in keeping up a proper supply of young ones. In ordinary fruiting seasons the price of ripe Gooseberries or Black Currants usually averages one shilling per gallon—a much lower price than that quoted by one correspondent—a fact that will show plainly how largely the fruits are grown. I think the tendency amongst Gooseberry-bushes to die off large branches at a time when the trees should be at the height of their growth and productiveness, is due more to hard pruning than to any other cause. It should be borne in mind that both the Gooseberry and Currant propagate or renew themselves naturally by suckers, and consequently manifest a great tendency to develop that form of growth after a certain number of years. The maintenance of a clean stem can thus rarely be obtained, except at the expense of labour itself. I expect the fifty-year-old bushes mentioned by one correspondent must have gone through many of these renewals, and have about as much of the original tree in them as the celebrated gun that was still the same, but had had a new “lock, stock, and barrel.” An old Gooseberry plantation is generally one of the most unsightly objects in a garden, and miserable attempts at renovation are often made by planting young bushes as the old ones die out, failure almost always resulting. No safer plan can be adopted to maintain an efficient supply of clean bushes and fine fruit than the plantation of young trees, in number equal to one-third of the entire number grown. This should be done about every third or fourth year, and in quarters of fresh soil devoted exclusively to these, and not in the old-fashioned and objectionable manner of putting them all round the quarters next the walks. The best manure for bush fruits is to be found in a well-rotted rubbish-heap—stuff that is sufficiently nutritive without developing that coarse growth usually engendered by strong manure. Forking should be done sparingly among the roots, except where, when in a young state, the roots are sufficiently far apart to admit of vegetables being grown for a year or two between them; and this is much the wisest plan, as it allows of that after-expansion of growth so essential to the health and productiveness of the tree. I have often been surprised to see the extraordinary quantity of fruit that

bushes so cared for will produce, the failure of the crop being a rarity. Perhaps in cottage-gardens the better plan is to have these descriptions of fruits planted in rows at wide intervals across the garden, the intervening spaces being cropped with vegetables. This arrangement, however, must depend somewhat upon the shape of the ground ; for small gardens it is usually the most economical. When the bushes are carefully tended, no portion of the garden will yield so lucrative a return. For consumption by the cottager's family, next to the Apple, the fruits of the Gooseberry and Black Currant are the most wholesome and useful. It would indeed be well if every cottage possessed in winter its carefully-preserved store of jam from these fruits ; and when we compare the very high price towards which butter is now tending, with the low figure at which sugar can be obtained, it is somewhat a matter for surprise that in our rural cottage homes nice, wholesome, home-made jam is not more generally consumed. However, the consideration of these things might lead us into questions of domestic economy that this is not the proper place to discuss ; and I will leave it by expressing the hope that in these, as well as in other matters, the people may become yet more "educated."—A. D., in 'Gardeners' Chronicle.'



A BLESSING ON AN OLD BROOME.

"SAMUEL BROOME, for forty years gardener to the Honourable Society of the Inner Temple, whose annual Chrysanthemum Show was one of the sights of London, and who, in their culture, gave such valuable testimony to the effects of Lord Palmerston's Smoke Act, is dead, at a ripe old age. He lived respected, and he died happy."—*Obituary of the day.*

Poor old Broome, art thou gone ! and shall we hear
Thy annual *Jubilate* never more,

O'er the Chrysanthemums that were so dear

Unto thy honest heart, as, year by year,

They decked the Temple Garden's swarded floor !

Like Henry Brougham, thy greater homonym,

Thy pride and joy was to see cleared away

The stagnant, stifling, smoke-clouds, that made dim

The Temple of the law, and on Thames' brim

Alike for flowers and lawyers darkened day.

And when the Smoke Act passed—and on Thames stream

Steamers forbore to smoke, and on Thames' shore

Chimney-shafts ceased from sooty mouths to teem

The blacks, that turned to griminess the gleam

Of the Chrysanthemums thou didst adore—

Never was simple man more glad than thou,

Never were gentler pride and joy than thine—

Pleased to see pleased crowds round thy *Pompons* bow,

Children, maids, barristers of parchment brow,

Who rarely noticed sun's or blossom's shine.

Along Thames' bank thy blooms stood brave and bold,

The brighter for the brick and mortar round :

And if *thy* flowers were flowers of gold,

So innocent none grew from Temple mould,

None so enriched, yet cumbered not, the ground.

How oft, when autumn daylight in the west
 Was blended with the City's lurid flare,
 Pale cheeks and aching brows thy flowers have blest,
 That breathed a breath of Nature and her rest,
 On brains o'erwearied with law's cark and care.

Farewell to thee, kind, honest, old Sam Broome,
 In *boutons d'or* above thee bloom the mould—
 No London smoke distress thee in the tomb,
 And whosoe'er i' the Temple fills thy room,
 May the new Broom sweep clean as did the old.

—Punch.



NOTES AND QUERIES.

[We regret that an unusual press of matter compels us to postpone many valuable communications.—Eds.]

LADYBIRDS: A NEW INSECTICIDE.—During last summer the public attention was drawn to the large flights of these little insects that appeared in many parts of England, and especially the attention of horticulturists, many of whom, from a close observation of their habits, came to the conclusion, that as destroyers of the green aphid their services would be invaluable. The writer of this paragraph himself put their uses in this respect to the test, and found that in every case when placed upon plants infested with green-fly, the Ladybirds made a complete clearance of the pest. Bearing this experience in mind, he has this season already commenced to be a ladybird-catcher; and as they are even now to be found in considerable abundance on warm sunny days, the task of gathering these useful insects is not one of great difficulty. As fast as they are collected they are placed in the greenhouse amongst the plants, especially around the *Calceolarias* and *Cinerarias*, and the writer hopes thereby to keep the pest of green-fly entirely under. Will any one else attempt the same experiment, and, as I intend to do myself, duly report progress in the 'Gardener'? A. D.

CREEPERS FOR A CONSERVATORY (G. V.)—Messrs E. G. Henderson & Son, Wellington Road Nursery, St John's Wood, N.W., have been kind enough to send us the following list of "spare-growing, free-blossoming creepers" as suitable for your purpose—viz.: 1. *Abutilon striatum*, orange and brown; 2. *Acacia dealbata*, golden yellow; 3. *Bignonia jasminoides splendens*, blush pink, and dark centre; 4. *Bignonia speciosa*, pink, with violet lines; 5. *Dolichus lignosus*, rose; 6. *Hoya carnosa*, white, tinted blush; 7. *Jasminum azoricum*, white; 8. *Jasminum grandiflorum*, white; 9. *Kennedyia monophylla*, violet purple; 10. *Lapageria rosea*, carmine rose; 11. *Passiflora Marryattæ*, reddish rose; 12. *Plumbago Capensis*, light porcelain blue; 13. *Rhyncospermum jasminoides*, white; 14. *Sollya heterophylla*, blue; and, 15. *Passiflora hybrida floribunda*, purplish lilac. They recommend the foregoing as a list of sparingly-branched climbers, free from exuberant growth, and including several old species; all of which are free blooming in mature growth. No. 2 is elegant in habit of foliage, and requires age and lateral growth to produce flowers. Nos. 3, 6, 9, 10, and 13 are strictly evergreen; and numbers 4, 8, and 14, sub-evergreen. Nos. 7, 8, and 13 produce fragrant blossoms. Nos. 6 and 8 should be placed in the warmest positions; Nos. 7, 8,

10, and 12 are adapted for blooming in winter. If more extensive-growing kinds were required, then there should be included *Bignonia grandiflora*, scarlet; *Solanum jasminiflorum*, white; *Tacsonia Van Volxemi*, crimson; *Tacsonia mollissima*, rose; and *Cobæa scandens variegata*. We think this selection will afford you ample material for your purpose.

VIOLETS.—The culture of the Violet is exceedingly simple. In April the side runners should be allowed to grow, and to encourage them to root freely they should have light rich soil sifted among them. In May a piece of ground in a north or west border, or in a partially-shaded situation, should be chosen, and well dressed with any light rich manure. A good dressing of charred material—such as burnt vegetable-refuse, charcoal-dust, or wood-ashes—should also be added if it could be obtained, as it materially encourages the growth of a healthy, dark-green foliage, and a profusion of fine large flowers. The runners should be carefully lifted as soon as they are well rooted, and be planted in prepared beds a foot apart. They should not be allowed to suffer from want of water, and all runners or side-shoots should be pinched off as soon as they appear. By the end of September they will be found strong plants, and will lift with good balls, if required to bloom elsewhere. I think they bloom earlier and more freely if allowed to remain undisturbed.

D. M.

FREAKS OF VARIEGATION.—We appear to be fast approaching a state of things in relation to Horticulture, when we shall not have any description of green-foliaged plant of which there will not also be its variegated counterpart. The extent to which this characteristic has developed itself in hardy plants especially is something remarkable, whether in the case of cultivated or wild species and varieties. The variegated Plantain is a well-known instance; and recently I gathered from the roadside a plant of the *Cineraria palustris* showing partial variegation, that has since developed into an entirely creamy-white-coloured foliage. For the first time, to my knowledge, I have this winter met with a variegated Sweet William, having well-defined streaks of white running the whole length of the leaves; and again, although not quite so novel in appearance, several plants of variegated *Primula* have come amongst my batch of this popular winter and spring flower. The mention of a variegated Cabbage will cause many to smile, but I can assure them that as a white-foliaged plant for greenhouse decoration in the winter it is almost unrivalled, as the variegation is of the whitest character, and might justly be described as snow white, the leaves being broadly edged—in fact, quite eclipsing the variegated *Hydrangea*.

A. D.

BEE-KEEPING.—I am glad to find you have begun a series of hints to bee-keepers. I am sure it will be well received. After Mr Abbott's papers are finished, a higher series might be introduced for those who are not quite novices; and, further, if you could give a chapter on the habits and character of, and the advantages derived from, the culture of the Alp bee (or Ligurian), I am sure bee-keepers will be much gratified. I obtained a hive of this newly-imported bee last summer, and the circumstance having been noted in our local newspaper, it was most interesting to notice how many bee-keepers came long distances to see the Ligurian bees, and what expressions of delight they made use of on seeing them, and also on handling the "bonnie beasts," as one of my visitors termed them. I find some of my stocks are suffering from dysentery, owing probably to the season. I have tried various methods of housing my stocks, but the old plan—pins in the ground, and a good straw hood—is as good as any, as one can get about the hives so much better; and in handling the bees, the other stocks are

not disturbed. Independent of any profitable result from bee-keeping, a few skeps in a garden produces many interesting features, and to watch the bees on a pleasant summer's day is a most instructive occupation. I can only wish the bee-hive was oftener seen in the gardens both of the rich and the poor.

R. S. SHEARER, Stirling.

PROPAGATION OF CENTAUREA RAGUSINA (CANDIDISSIMA) (C. L. S.)—The best way to obtain a supply of this plant is to take plants from the flower-garden in the autumn, and pinch or cut their heads in at the same time. They should be potted in some light sandy soil, and placed in a rather warm and dry greenhouse or pit. By the month of February these will have pushed out a lot of stubby shoots, and at that time the strongest of these should be taken off and inserted as cuttings. When the best cuttings have been taken off these stumps, they may be allowed to grow away undisturbed, and in a short time another batch will be strong enough to be taken from them, and so on till enough plants are obtained. Then the old plants may be thrown away, or, better still, allowed to grow into bushy plants, and used in May along with others. Instead of putting the cuttings into pots or pans, as is the custom, a sounder plan is to put one in the centre of each little pot; and then, when it strikes root, which it will quickly do, there is no necessity for mutilating the roots, as is the case when things are put into cutting pots or pans. If convenient, the pots should be plunged in tan, or in a hotbed, as treated thus they will root more readily. The foliage should not be wetted more than is necessary. After this it is simply necessary to harden the plants off in the usual way, and so fit them for being used in the flower-garden.

THE EDUCATION OF GARDENERS.—Allow me to correct what seems to be a glaring error into which "Down South" appears to have fallen in his statement of the case of "One in Despair." The latter did not give any intelligent reader reason to infer that education was of comparatively little benefit to a gardener; on the contrary, he pronounced it to be invaluable, as "Down South" could readily perceive, if with an unprejudiced mind he were to carefully read over again the paper by "One in Despair." Opportunities were certainly given to him to rise, though he failed to use them; but it was simply an individual case, and not one of general application. In the case of "One in Despair" education appeared to be of little value; but there are many others having the power to rise, but wanting the opportunity, and such a position affords but a defective view of their real abilities.

UP NORTH.

SEDUM ACRE AUREUM.—This form of the common stone crop has been well described as the "most valuable of all the humbler plants we possess for what is termed the 'Spring Flower-Garden.'" It forms a "glittering mass of yellow points," dense and compact, and for carpet-work in the early spring months it is unequalled. A moist situation suits it best; there it will thrive, and gladden the heart of the cultivator, as about one-third of the point of each shoot is of the brightest golden yellow.

E. W.

PATENT COMPOUNDS.—A neighbouring gardener recently called my attention to the state of the plants in his greenhouse, which, on looking at them, I found to be in a most deplorable condition, presenting a sight that might reasonably produce heartache in any man who possessed any horticultural tastes; and yet, in the early part of the winter, this same house (a new one too) was filled with a capital lot of greenhouse plants of various kinds, including a quantity of bedding plants, the whole of which looked at that time as nice and healthy as

could possibly be desired. What, then, was the cause of the change? Certainly not negligence, for there had been no lack of attention. It was indeed at the first a puzzle to the gardener, as well as to his employer; but the reason of it was shortly discovered. Previous to the winter the hot-water pipes in the house had been coated over with a patent solution, nearly black in colour, that appears to be a good preservative of wood, and into the composition of which creosote enters largely. This compound, however, proved most destructive to plant-life; for as soon as the water in the pipes was heated, the noxious ingredients contained in the compound were given forth with the most deplorable results. Perhaps the mention of this incident may prove a not unnecessary caution. A. D.

THORNHILL.—We are unable to say why your double white Camellia drops its buds as you describe. You say you water the border regularly, that the drainage seems good, and the plant healthy. These conditions, and the temperature you keep the conservatory at, should induce a fine display of bloom. The only suspicion we have is, that as your border is only 1 foot wide, and the hot-water pipes pass near it, the roots, that are no doubt matted against the brick-work, may get very dry at times, even though the general mass of the soil may be all right; and in this way a check is given to the plant, resulting in the dropping of the flower-buds. You should examine this part of the case, and give more water if required, and syringe overhead till the blooms open.

CAMELLIA BUDS DROPPING.—In the February number of the 'Gardener' there is, at page 91, advice on Camellia culture. Mine, unfortunately, were potted in a mixture of loam and peat, with the usual results. Hardly has one tree kept its buds. The advice given by Mr Pearson is, "When they *require* potting (which of course mine do), to get rid of the peat, let it be done immediately they are out of bloom." Would you have the goodness to let me know what I am to do, as my trees will not have any bloom? H. W., NORWOOD.

[We submitted our correspondent's letter to a cultivator on whose opinion we could rely, and he has written as follows: "The plants may now be turned out of the pots, the soil shaken from the roots, and be repotted in a rich loam, and then plunged in a gentle bottom-heat in a close and moist house where there is not very much top-heat, until they have made their growth; then gradually harden the plants off, and keep them well supplied with water during the summer. I think the buds drop as much from an insufficient supply of moisture as from any other cause." A few days ago we looked into the greenhouse of an amateur cultivator of plants residing in the neighbourhood of London, and saw there some small plants of Camellias having a fine bud at the termination of each shoot. In the house there were Cinerarias, Cyclamens, Primulas, &c., in flower, besides Pelargoniums, Fuchsias, &c. Everything in the house had a peculiarly fresh and healthy appearance; and this was attributed by our host to the fact, that he gives the house a gentle syringing some three or four times daily, not sparing any of the plants, and a slight heat is kept on at the pipes in dull weather. As a matter of course, in severe weather the syringing is withheld. The theory in regard to Camellia buds dropping held by this gentleman was, that the foliage should be kept frequently moistened, and that a moist atmosphere is essential to the wellbeing of the Camellia. With such constant syringing but little root-watering is required, and then only just enough to moisten the balls—they are not thoroughly saturated with water.—EDS.]

A. B. C.—We would expect paraffin-oil applied to Peach-trees to do the very serious injury, if it did not kill them. We have known carbolic acid at the rate of 1 ounce to the gallon of water, clear Peach-trees of scale, and them no harm.

INQUIRER.—You may inarch Vines by placing old wood to old wood, young wood to old wood, or young wood to young wood. In the latter case, wood should be pretty firm. Place the plants to be united close together then with a sharp knife take a slice off each, not quite into the pith; place the wounds together—two of the edges of which should be exactly together—then bind them firmly together with matting, and let them remain so for two months at the end of which time the union should be formed. The matting may then be removed and retied slacker, to allow the wood to expand. No clay is necessary, and ninety-nine out of every hundred should form a perfect union. The Duchess of Buccleuch makes a good stock.

VIOLA "BLUE PERFECTION."—I have been greatly pleased to notice that the young plants of this very beautiful Viola which I have here growing in my garden display a creeping habit, a quality that cannot fail to greatly enhance its value as a bedding-plant; for, instead of growing straight upward, as is usual in this class of plants, it strikes right away horizontally, thus manifesting a decided variation even in its growth, as well as that which also exists in its flower, to such a marked degree. It may interest those to whom it is yet unknown if I state that I have the good fortune to see this Viola used as an edging-plant in one of the finest flower gardens in the south of England during the hot and dry month of August last and it was not only to me a great surprise, in consequence of its novelty, but also a matter for congratulation that there existed a dwarf blue bedding-plant so constant in its character, and at the same time so effective in its decorative usefulness. It is no exaggeration to say that there was nothing else in the garden equal to it. Whatever may have been its origin, I am certain it will obtain a large share of popularity, and I trust will also prove the progenitor of a decidedly improved race of Violas.—A. D.

BOOKS (A Subscriber).—Kemp's 'How to Lay out a Garden,' and 'How Crocuses Grow,' are likely to suit you, though, like most works of the character, they are rather high in price. The former is published by Bradbury & Evans, London, and would cost about 15s.; the latter by Macmillan & Co., London, price from 5s. to 7s. "Subscriber" asks if there are any good books on landscape-gardening and horticultural chemistry published at a cheap rate, as works like M'Intosh's and Loudon's are quite out of his reach, owing to the high price. Can any of our readers suggest works likely to be of use to "Subscriber," and within his means for obtaining them?

SALSAFY AND SCORZONERA.—I am very much pleased to see "D. T." telling us how to grow these two excellent vegetables, the culture and use of which are so little understood in England. On the Continent they are very much used, and, with a mutton cutlet, either of these vegetables makes up a most enjoyable supper. My object in writing to you is, to ask "D. T." or some other correspondent to tell us how these vegetables are dressed on the Continent; and this information can easily be gleaned from some *chef de cuisine* in a large establishment. A boon will be conferred on myself and many others if this information can be given to us.

VEGETARIAN.

THE GARDENER.

APRIL 1870.



THE PROPOSED ABANDONMENT OF CHISWICK GARDENS.



HAT many of our readers are interested in this matter, is clear from the number of communications we have received relating thereto; and the tone of these communications is to deprecate the giving up of Chiswick, as proposed by the Royal Horticultural Society. There appears to be something about such a proposal that savours of desecration—the forcible giving up of what has become endeared to many by pleasant memories, and the power of associations—a spot sacred in times past to the promotion of the best interests of practical horticulture, and the preparation of young men to go forth and assume foremost positions among the leading gardeners of the day. To many, the proposal to abandon Chiswick is the snapping asunder of the only link binding them in a bond of sympathy to the doings of the Royal Horticultural Society.

It is now believed that a portion of the gardens will be retained for the use of the Society till the termination of their lease, some years hence. Steps have been taken to effect such an arrangement, and, in all probability, it will be perfected ere these lines appear in print. But that, with such retention, there will also be continued those illustrations of practical horticulture that have won such renown for Chiswick in times past, we very much doubt; and we by no means stand alone in our scepticism. Our impression is, that the Society finds a garden like Chiswick somewhat irksome, and, naturally enough, desires to be quit of the responsibility and cost of maintaining it. Those who are in the habit of visiting Chiswick, and seeing what can be done there, were much surprised to read in the recent report of the Society that

“the results of the cultivation there, owing to its low, cold, damp position, combined with the gradual increase of smoke and houses around it, are yearly becoming less satisfactory.” We had come to think differently of Chiswick, and to believe that, had Mr Barron at his command means to make it a valuable school of instruction in matters horticultural, neither its position, nor the increase of houses and smoke about it, would prove very serious obstacles in working out his plans in a satisfactory manner. Rather, the wonder is that, with such poor means at his command, he has done so much.

To our mind, the Society cares very little indeed for practical horticulture as it could be exhibited at Chiswick, were ample means employed thereat. All that the Society appears to require is a feeding-place for South Kensington—a nursery, in fact, from which can be drawn materials to decorate the gardens there. Horticulture at South Kensington has become fashionable—the gardens are a fashionable lounging-place, the exhibitions a means for drawing a company together, to see each other, and be seen in return; and the gardens must, therefore, be made as attractive as possible. The practical horticulturist is a being regarded as capable of affording an attractive show for the fashionables to gaze at when not absorbed in the contemplation of each other; he is encouraged, and petted, and in a certain way rewarded; but the Society has no practical sympathy with what he is so worthily doing, and the extent of the obligation can be assessed at a pecuniary value. It is the price paid by horticulture for having been raised into the elevated atmosphere of fashion; and when any science attains to such a distinction, the chances are that it will cease to operate for the production of much practical good.

All that the Society means to do—all that it perhaps can do—is to maintain a series of exhibitions at South Kensington for the amusement of its fashionable fellows. Those practical horticulturists who are connected with the Society will have to rest satisfied with what encouragement horticulture can get there. It is refreshing to know that horticulture will progress and achieve new triumphs, even though a Royal Society may relegate its practical workings to those who develop them for the sake of the love they have for their work or for their own profit. From the Council of the Royal Horticultural Society they can henceforth expect but little; while the anticipations of those that have been but small in times past, will be completely destroyed. Whatever is in store for horticulture in the future—what of bright hopes and cheering doings shall brighten its progress in the time to come—will and must emanate from some centre other than that now to be found at South Kensington; and the sooner a new power rises into action the better will it be for the best interests of practical horticulture.

NOTES OF THE MONTH.

THE long-impending snowfall visited London on the morning of February 13th—a fitting close to the somewhat long and severe winter, which has left its mark on vegetation, having destroyed much—probably more than is surmised at the present time—during the period of the blustering severity of its reign. While the snow fell, it was so still and calm that it lodged on the trees and shrubs, giving them the appearance of being covered with a dense foliage of the finest silver; and when the sun broke out and lighted on them, they had the further appearance of being mantled with blossoms of the purest white. By noon, the sun, now gathering force as the days lengthen, soon dispelled, to a great extent, the garb of silver thrown over the earth, and by the intensity of its beams speedily dismissed hoary winter from further participation in the scene. There is now much reason to anticipate a genial spring and a fruitful beneficent summer.

At last a *bonâ fide* exhibition of Gladioli is to be held, and the 17th of August in the present year is the date fixed for the display. A very good list of subscriptions has been furnished by the leading growers, and nearly £70 will be distributed in prizes. Of this sum £20 is allotted to Continental growers. The following classes have been agreed upon, and we think a thoroughly good exhibition may reasonably be expected, should the season prove at all favourable, though it is scarcely possible the northern growers can compete thus early in the summer:—

FOR FOREIGN GROWERS.

Class 1.—36 Gladioli, cut spikes, distinct, £10, £6, £4.

FOR NURSERYMEN.

Class 2.—36 Gladioli, cut spikes, distinct (Prizes offered by His Grace the Duke of Buccleuch, and G. F. Wilson, Esq., F.R.S.), £7, £5, £3.

Class 3.—Gladioli, 18 cut spikes, distinct (for exhibitors not showing in Class 2), £5, £3, £2.

FOR AMATEURS.

Class 4.—12 Gladioli, cut spikes, distinct, £5, £3, £2.

Class 4 a.—9 Gladioli, cut spikes, distinct, £3, £2, £1.

Class 4 b.—6 Gladioli, cut spikes, distinct (for exhibitors not showing in classes 4 and 4 a), £2, £1, 10s., £1.

Class 4 c.—4 Gladioli, cut spikes, distinct, being new varieties sent out in the autumns of 1868, 1869, £2, £1.

The classes numbered 5 to 11 in the original schedule for the meeting of this day have not been altered.

This exhibition will be held at South Kensington, in connection with the meeting of the Royal Horticultural Society fixed for the above-mentioned date.

From the Continent comes an announcement that will be specially interesting to botanists, and we should think the offer is one likely to induce a spirited competition, particularly so among the Continental botanists. It is as follows: A prize is offered by the Royal Belgian Academy for an essay "to fix, by new researches, the place to be occupied in the natural system by *Lycopodium*, *Selaginella*, *Psilotum*, *Tmesipteris*, and *Phyloglossum*." The prize is to be a gold medal with £24. The essay must be written in Latin, French, or Flemish, and addressed, prepaid, to M. Ad. Quetelet, the Perpetual Secretary, before 1st June 1871. The Academy requires the greatest exactness in quotations, and the pages as well as editions of works cited must be given.

There appears to be reason to hope that the whole of the Chiswick Gardens will not be abandoned by the Royal Horticultural Society. We learn that it is proposed to retain all that part of it on which the glass structures are placed, and it is hoped a good piece of ground southward of that; but the walled-in kitchen-garden, as well as that part occupied by the collection of ornamental trees, will be given up. So it is stated; as a matter of course, there is much uncertainty as to what is really to be done, but there is certainly too much reason to fear that in as far as illustrations of practical horticulture are concerned, we have seen pretty well the last of any attempts in that direction at Chiswick.

A bulletin just issued by the Society of Acclimatisation of Paris is extremely interesting for the pregnant information it gives in regard to the Truffle. It has been compiled by M. Chatin, and at the outside he intimates that the Truffle is spoken of in the Book of Genesis under the Hebrew denomination of *dudain*. How the Truffles are generated, is a question M. Chatin cannot quite settle. Always found at the roots of certain trees, it was supposed by some that the raw material was furnished by the juice of the leaves penetrating into the ground; but one day a Truffle was found under a tub which had caught the juices, and that theory was destroyed. Others pretend that Truffles are simply tubercles of the roots near which they are found; but they seldom adhere to these roots, and there is no continuity—so that theory cannot stand. Many persons maintain that the Truffle is a subterraneous fruit, or a gall due to the sting of an insect, like the Gall-Nut. But the insect has not yet been discovered, nor the gallery by which it would have to withdraw, after having deposited the necessary matter. It is true, however, that certain flies are found to hover over Truffle-beds, and the poachers prefer to watch them to taking out a dog or a pig to hunt. As regards the cultivation of the Truffle, M. Chatin considers that we are still in the infancy of the art as regard

this root, mentioned in Genesis. It has long been the practice to plant Acorns with the view of eventually finding Truffles ; but the Acorns, says the writer, should be selected from Oaks under which Truffles have been found : the season, the soil, the site, should all be carefully chosen, and the Truffle-ground should not be disturbed after May. Oak and Chestnut leaves may be used as manure, and a little irrigation is not bad. Should a tree be cut down, the Truffles will sulk and leave the roots for years, if not for ever ; and in fact will often vanish if any of the larger branches be meddled with. Another curious detail is, that as the trees grow, the Truffle circle formed round them widens, and moves further away. The mysterious connection between the tree and its satellites remains to be solved. As regards Truffle-hunting, the sow is preferred to the hog, as being more docile and having a finer nose. A good pig will scent Truffles at 50 or 60 yards, and will very quickly lay them bare ; this done, some Acorns must be given to the animal, who will otherwise refuse to hunt any more. A pig may be hunted from the age of two till he attains five-and-twenty, but it is at four years old that he possesses all his most brilliant qualities. In a good many departments dogs are used, and they are easily taught to hunt ; some are trained to scratch up the Truffles, others merely to mark the spot. * A dog takes as much interest in the pursuit of Truffles as of game, manifesting the greatest pleasure in coming across a good bed. For the most of the foregoing information we are indebted to the Paris correspondent of 'Land and Water.'

A somewhat interesting discussion is just being raised as to the origin of *Viola cornuta*, var. *Perfection*, which was exhibited at a meeting of the Royal Horticultural Society in September last by Mr Jobson, of Rotherfield Park, Alton, and awarded a first-class certificate of merit. Mr B. S. Williams, who purchased the stock of it for distribution, claims it as a seedling raised by Mr Jobson, *V. cornuta* being one of its parents ; and he publicly intimates that "no plants but those which come from this stock are true in character." All that Mr Williams states in praise of this superb *Viola* is well deserved by it, and there is no doubt but that it will prove an invaluable blue-flowered summer bedding-plant, supplying a brilliant mauve-tinted blue, much needed in gardens. Whether it will bloom early enough in the spring to be of service for spring-bedding, remains to be seen ; we think the chances are against its proving of much service so early in the season. About its value there can be no difference of opinion ; about its origin, much difference of opinion. Singular to state, a *Viola* has been found in the Alton district, and especially about Salisbury, so similar to the Rotherfield *Viola*, that an identity is claimed ; and certainly we could see no difference between them when placed before us

for comparison. This Viola has been grown in the neighbourhood of Salisbury for several years, and a Mr George Smith not only states that it has been in his possession for some years, but that he can trace its history for several years prior to having it in his possession ; and claims the merit of being the first person who introduced this plant to the public. This appears fatal to the claim set up by Mr Jobson that it is a seedling of his own. The Floral Committee at South Kensington saw flowers of the two Violas, and the general impression appeared to be that the two were identical, and the chairman of the Floral Committee put on record that they were the same. The two will no doubt be fully tested during the coming summer. Meanwhile we cannot but express our sympathy with Mr Williams in having purchased the Rotherfield stock, under a full conviction that it was only to be found there and nowhere else, and his now finding it stated that it is by no means so new, or so restricted in cultivation, as he had been led to believe. The Salisbury Viola was most favourably noticed by a correspondent in page 144 of our last number.



SOME RANDOM THOUGHTS ABOUT GRAPE-GROWING.

THE present "age," especially the period of it we have reached, is strikingly characterised by a sifting of theories, principles, and practices. What have long been held as settled truths, are passing through the crucial ordeal of bold and startling investigation. In regard to the cultivation of the Grape-vine, a similar ordeal is being applied. I am one of those who believe that truth has nothing to fear from the sifting process ; the chaff will be scattered, and the truth made more evident, and be more firmly settled on an intelligent basis.

Looking, however, at present into the many theories (bearing on the treatment of the Vine) that are being advanced, they are plentiful enough, one would imagine, to lead even the experienced cultivator into a maze of bewilderment, while the position of the beginner must be one difficult to realise. Doubtless, amid all the din of the discussion there is secure and positive advancement, though some practical experience is certainly needed in order to separate the golden ore of ascertained facts from the dust with which it is mingled.

One Vine-grower literally kills the whole of the Vines he has attempted to cultivate on the single-rod, or, as it is now termed, restrictive, system ; and forthwith he rushes into print, condemns the single rod system, and writes a pamphlet to convert growers to the big Vine or extension system, as the panacea for all the ills the Vine is heir to. On the other hand, our preceptor is informed by another authority

that bad management had caused the premature death of his Vines, grown as single rods. Another authority reads a paper at a horticultural congress on the evil effects of soil taken from the magnesian limestone, and demonstrates unmistakably that he has failed to satisfy himself with Grape crops from such a soil ; and lo ! clear as appears to be his own proposition to himself, yet another authority labours to show that Vines and other fruit-trees thrive to the greatest perfection in the very soil the other so forcibly condemns. This second writer treats us northern bodies to a piece of news (in order to prove the fallacy of the one-rod or restrictive system, and to uphold the extension theory), by telling us that a set of celebrated Vines in Galloway had fallen into a sad plight, notwithstanding the very wonderful influence of aeration. This arouses another combatant, suffering from some symptoms of the Vine-decline epidemic ; and he shouts across the borders, Goliath-like, to the cultivator of the supposed-to-be-deceased Vines, to let him know that his Vines are "*nae deed*," but "all a-growing, all a-blowing ;" and that by means of a current of wind carried through below their roots, the Vines would be made to absorb so much gas as would enable them to produce splendid bunches of Grapes.

Turning to the question of pruning, another advocates the cut-to-the-best bud, or cow-horn system. This the next combatant repudiates, and maintains that the neatest Vines and most useful bunches are produced by the close-spurring system. I knew of a smart English practical gardener coming down to the banks of the Clyde to take charge of a garden, and his neighbour found him in his vinery one morning cutting off all the long spurs from the Vines that had for years been cow-horned, and, of course, leaving not a bud to be depended on. "This," the operator said to his neighbour—"this is what we call spurring in the south ;" and got for reply, "By George ! and it's spurring in the north too." And so the two systems are still adhered to, and upheld as correct by their respective advocates.

About the growth and action of roots the manifestoes are quite as uncertain ; one insists that growth first commences in the branches, another maintains that the roots start into growth first—he is certain of it, for he has seen it, and seeing is believing. A third asserts that under his good management the Vines (which in some hands are so obstinately stupid) start into activity simultaneously at both ends ; while a writer from the banks of Nith tries to make it clear that you can almost say to either wood or roots, "Grow first !" and it groweth ; and maintains that roots are very much the creatures of circumstances, and that writers should not be too dogmatic, seeing that our knowledge of vegetable physiology is of a somewhat imperfect character.

I might go on to show how almost every point connected with Grape-

growing is a matter for dispute by different cultivators who are reputed and recognised authorities ; but enough has been said to show how very widely authorities differ on this as on other important matters, and that a sifting process is going on which is much to be preferred either to a stagnation of thought or the promulgation of merely stereotyped ideas. One of the chief objects of cultivators should be to assist beginners to pick up some crumbs of true and correct practice, as circumstances will admit of its being done.

With regard to the one-Vine, or modifications of the one-Vine, system, it must be patent to all that its advocates can only point to a very few instances of cultivation in that character as successful examples, and these under rather exceptional circumstances. One might count them all on the fingers of the hands. There are a few of these monster Vines well used to illustrate the idea that by letting Vines have plenty of scope at root and branch, long-lived Vines are obtained that bear ordinary—*very ordinary*—crops for a long term of years in succession. We are never told of any such Vines being subject to the debilitating ordeal of ripening, for twenty years in succession, their Grapes in April or May, nor of their percentage of mortality, simply because they are not, that I am aware of, subject to the hard uphill work of thousands of Vines grown on the single-rod system, and because there are very few such Vines from which to form a table of mortality. But if a house of Vines grown on the single-rod system happens to break down, forthwith the advocates of the extension theory trumpet it from Land's End to John o' Groats. There are plenty of single rods, and very hard-worked ones too ; and is it a matter for wonder to be able to construct tables of mortality from their ranks ? Be it borne in mind, I am not desirous of disparaging the monster Vine plan under certain conditions. What I want to show is, that the balance struck between the two systems is unwarrantable, unfair, and calculated to mislead.

In every one of the instances where monster Vines are held up as patterns of cultivation, they have an unlimited run in congenial soil, and that in the natural directions of outwards and onwards. Now, apart from all other considerations, it appears to me very questionable whether—in a position where the natural soil is adverse, and the border has to be artificially formed, and, as a consequence of position and dearth of soil, restricted, say, to a parallelogram 30 feet by 60 feet—any one of these large Vines pointed to would, at this date, have been in the same vigour and fruitful condition in a circumscribed artificial border, especially when denied progress in a direct contrary line to the top growth. Their doing well for so long a time, in my opinion, depends on their roots having unlimited room in a soil and

subsoil naturally suited to the Vine. And such being the case, it is simply ridiculous to preach this extension system for universal practice. Besides, has it been proved that single-rods, 20 feet long, planted 4 feet apart, managed on the spur system, and not allowed to bear fruit out of proportion to the space occupied by the foliage, would not survive and do well, all other circumstances in soil and root-scope being equal, for a similarly lengthened period? What of the longevity of the old restricted Vine-stools on the Continent?

It has not been advanced—for a wonder—that Vines of such size, with their roots occupying, it may be, a paddock, are suitable for any other purpose than ripening their crops, almost without any fire-heat, in August and September; while it is a well-known fact that a vast proportion of single-rod Vines are started into growth under the most artificial conditions in the dead of winter. More than this, it is a well-known fact that such is the character of the natural soil of a vast number of gardens, that it would be a misuse of hothouse room to plant Vines without preparing both artificial sites and soils for their growth. This fact renders unlimited root-extension impossible, so that the borders under such circumstances are soon traversed, outwardly especially, by the roots; and I cannot suppose that such limited scope is any more calculated for the long maintenance of a monster Vine than for smaller ones, both of which may, however, by good surface-management, live a long time, and bear fine Grapes, if not forced very early.

But apart from the scope afforded to roots, if the single-rod Vines, planted 4 feet apart, were allowed to bear fruit in proportion to the foliage, what quantity will they make every year in that space? I do not see that much is gained by allowing the Vines to make three rods instead of one, and training them 2 feet and even 18 inches apart, as is so often met with; while, if you let the single 20-feet long rod have 4 feet of space and unlimited run in good soil, why should it not live as long as the monster Vine? We are told that Mr Meredith trains his rods at 2 feet apart. I have never seen his Vines; but this I will predict, that if he persists in training them so close, whether otherwise restricted or extended, his crops will go back. He may, over his vast extent of glass, be able to cut here and there, near the top, show bunches; but with such thick crowded training, his general crop will not continue equal to what he has produced. Vines at 3, and especially 4, feet apart will make far more permanent Vines, and continue to yield finer crops, than when in closer quarters. In this I am not referring to sensational Grape-growing, now made so much of, but to good substantial family cropping, which is incompatible with sensational Grape-growing.

My advice is, to avoid the one- or two-Vine system in a vinery where the border is strictly artificial, the soil and subsoil unfavourable, and where circumstances do not admit of a border extension to the front, so as to keep pace with the onward route of the roots consequent on a large top-development. Under such circumstances a greater number of smaller Vines will take more equable possession of the nutriment afforded by a limited area, and are not so likely to go beyond it into the deleterious surroundings, as one large Vine or two would be likely to do. Under different circumstances, nothing can be said against the extension system.

The magnesian-limestone question is one regarding which I cannot say I have any settled conviction. This much I can say, from experience in Vine-border making in different parts of the country, that some soils which, to appearance, are much alike, have very different effects on the growth of the Vine. On the chalk of Buckinghamshire I found Vines make splendid growths, and yield equally fine Grapes. In Wales I have seen wonderful crops of Grapes where the water was so impregnated with lime that the Grapes, if syringed with it, became as if white-washed. In that soil the Vines and bunches were altogether splendid, grown in Pine-pits, a rod to each rafter. I have had Vines thrive remarkably well, and yield Grapes of unsurpassed quality (by this I do not mean mere size), in soil where the Rhododendron and the Heath died out because of the presence of lime in the soil. Moreover, the water with which the Vines were constantly watered was so full of lime that it ate through lead cisterns in a very short time, and literally killed Azaleas, Camellias, &c.; but I never could detect that it injured the Vines, except whitening the foliage and fruit if syringed with it. The strongest pot-Vines I ever grew were in this lime-impregnated soil and water, and Muscats especially seemed to colour to a very high degree. The crops produced were not of the sensational but family character—moderate, compact bunches in large quantities.

Since coming here, I have observed that on the red soil, or the red sandstone (much the same as the soil about Dunbar in East Lothian), the Vine grows with wonderful vigour. The Muscat Hambro', on its own roots, grows with great vigour in a small vinery at Eccles; and so do Muscats and other Vines, all bearing wonderful bunches in this red soil. I planted some Golden Champion and Tynningham Muscats last year in a low house (very unsuitable for Grapes), which made growths that astonished me for vigour and solidity. One Vine, struck from an eye and planted in April, was left to grow unrestricted, and it made 36 feet of main stem, strong wood; and the others would have done the same, had they not been handled with an object. The loam is rather of a reddish colour, and somewhat strong. The influence of

soils is doubtless great, but my experience and observation would lead me to decide for the red sandstone to produce vigorous Vines.

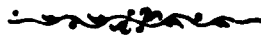
As to the pruning by the cut-to-the-best-bud system—that is, leaving two, three, or four eyes, as the case may be, in preference to spurring back to one bud—I think there is a phase of this question which has not been brought prominently forward. The two- or three-bud system produces, perhaps, a bigger, at least a longer, bunch; but that is not proving that it produces a better or more serviceable bunch, which is the real question. No good Grape-grower is ever afraid to spur back good Vines to a single eye close home to the main stem. It is a well-known fact that the ripening process of the wood begins at the base of the young shoot, and finishes upwards to the extremity; and that, in pruning the shoot within an inch or so of the main stem, the wood is found harder and with much less pith than three or four buds farther up along the growth. My experience has been—for I have tested it over and over again—that the long spur yields a bigger and less compact bunch, more likely to shank than does the hard wood closer home, which yields a more compact, neat, and serviceable bunch, and generally with bigger berries and stiffer foot-stalks than the bigger buds farther up the shoot. Now I hold it to be wrong to judge of the produce of a Vine by the size of bunch. The aim of the family Grape-grower is fine berries, and compact, moderate-sized bunches in great numbers. Tested by family usefulness, and, commercially, by the demand of the market, the smaller and compact bunch takes precedence of the biggest bunch; besides, employers soon tire of sensational Grape-growing to the tune of 6 or 8 bunches to a 16 or 20 feet rafter. If serviceable bunches are wanted, I advise to prune back to one eye; if larger, looser, and less serviceable bunches are wanted, take them from the fourth or fifth bud.

The question as to whether the root or top growth of Vines commences first (looked at as coming merely within the range of physiology) may not be of vast moment to the practitioner, although all that is connected with plant life bears directly on practical horticulture. Most experienced Vine-growers will agree that the growth of root or branch takes precedence the one of the other, according to circumstances. The local application of heat—the great moving power in the growth of plants—in most cases settles that. It is a point I have narrowly watched in the case of pot-Vines, and have always found that a Vine not plunged in bottom-heat, but placed on a shelf in a hothouse, will make top-growth before new growth takes place at the root; but, plunged in bottom-heat, and the top kept cool, young roots are produced first. Vines shaken out and planted in the ordinary way, I have invariably found to make top-growth to a certain extent rapidly,

then halt till young feeders were formed, when the top starts at an accelerated pace; and I believe this is, in the majority of cases, the order of nature.

The question that most concerns practical gardeners appears to me to be, whether an effort should be made to get root-growth prior to top-growth? In forcing, the great advantage of bottom-heat consists in its setting the fluids stored up in the Vine speedily in motion, and in producing root-growth sooner than it takes place in an unheated border. The best way of applying this bottom-heat to Vines seems to be a disputed point. Yet it seems strange it should be so, as, in its application to other plants, there seems little difference of opinion as to the propriety of applying it from below by hot-water pipes. To apply it from above, seems to me very much like putting a boiler below the fire to get most heat from the fire.

D. T.



HINTS FOR AMATEURS.

THE long-continued frosty weather may have kept some behind with many of the more important garden operations, which will in a great measure be a barrier to success. When land is tenacious and heavy, it will be more difficult to deal with than soil of a light warm nature. However, by a little perseverance, much can be done with clay soil; and, when well managed, it often carries the best of crops. As an example: we saw at Frogmore, last season, large breadths of ground which had been well trenched for sowing and planting, but was so much like iron that it appeared impossible to work it by any means. The day before it was required for cropping, copious waterings were given all over the surfaces, and the following day the soil broke down freely like powder, and was in excellent order for any purpose. When weather is wet, this kind of ground can hardly be touched. Every opportunity should be taken to break the surface as well as possible, and the seeds should be sown in lines, covering them with any waste soil finely sifted, which we have often recommended to be kept in store in dry quarters till wanted. We have often seen drills made for Peas, Beans, &c., with the spade; the seeds sown and covered with charcoal dust or leaf-mould, and the crops turn out amazingly fine. Planting of Cabbage, Cauliflower, or similar plants, may be done in heavy land by making holes with a trowel, placing a handful or two of good soil to each plant as the work goes on: a little soot in this soil makes uncomfortable quarters for grubs, which often destroy Cabbage and Cauliflower. The ground for main crop of Carrots should

now be in good order ; a good coating of lime and soot may be useful in keeping grubs in check—the surface well broken and drills drawn a foot or 14 inches apart ; on poor sandy soil less will do. A good crop of Carrots in gardens is seldom met with, and the free use of lime used in preparing the ground through the winter, and other means which are sometimes used with success, often amount to more than good Carrots can be bought for in the districts where they grow without any attention whatever. Asparagus may now be sown for keeping up a stock of roots ; light rich soil of a sandy mixture is the best. Artichokes, globe, should now be looked over, forking among the plants and breaking over the ground without injuring the roots : suckers, when they can be had, may be planted for late supplies. Jerusalem Artichokes, if not already planted, may be got in at once, if treated like Potatoes ; keeping them in single rows, and staking up the stems if they get top-heavy, is all they require. When the rows are thickly planted, the produce is much smaller for want of light and air. Broad Beans may again be planted for a succession, if the soil for them is light. Mulching may be of great service as the season advances. Beet will require attention soon ; though it often does well on any soil, the produce is very stringy and tough when grown on shallow indifferent soil. We again repeat that rank manure, newly given to roots of all kinds, is their ruin. Silver Beet makes a useful substitute in winter for Spinach, but it need not be sown for some time. Broccoli, Brussels Sprouts, Cabbage, Cauliflower, and Lettuces may be sown as formerly advised. Birds and slugs will be great enemies to the young plants as they begin to vegetate. Where Onions are liable to be eaten by grubs, a quantity of last season's bulbs may be planted, dusting them with soot in showery weather. Herbs of all kinds may be sown on a dry sheltered border. Basil will require heat and careful hardening off before being planted on a warm border. Tomatoes, sown in a little warmth and liberally treated, will give a good late supply. If grown in pots of large size, and plunged at the base of a wall or any sunny spot well sheltered from wind, they will produce freely. Large established plants to begin with is of great importance. Radishes and Salads of all kinds require to be sown often at this season ; if watering the seeds is necessary, it should be done in the morning, till the nights are warmer. Quick growth, and no check given, prevents toughness and rank flavour. Rhubarb seed may be sown in a warm position, where the soil is free and dry. If blanched stalks are preferred, pots or boxes may be placed over the crowns, keeping out the most of the air ; it is thus made more tender and juicy. Spinach, round, may be sown between other crops, or bushes if ground is scarce. To have fine large leaves, plenty of rotten

manure must be allowed ; sow thinly. The plants should be at least 4 inches apart in the rows.

Turnips may be sown in small quantities still, dusting wood-ashes or soot over the leaves as they come through the ground, to prevent the ravages of "fly." If not already done, the main crop of Celery should be sown, either in a frame or under a handlight. Do not let the young plants become matted or dry at the root ; shelter them from cutting winds, but increase light and air as they grow ; and for pricing them out on, let the bed be, if possible, solid rotten manure, with 2 inches of light soil over the surface ; and when the roots are well established, there will be no difficulty in lifting large balls with the plants, when placed in the trenches, in June or July. Ground in which is grown the latest Broccoli does well for the Celery trenches. One or two sowings of Peas may be got in during the month. Stop those growing before they fall over, and keep the hoe going free among all growing crops ; order and neatness should prevail everywhere. Fine raking of surfaces is not to be recommended in the vegetable garden. Melons and Cucumbers will now require attention keeping them trained out regular over the beds, keeping the principal shoots a good distance apart, so that the bearing-shoots are not crowded. In one light, two leading shoots of Melons trained each way, and the tops taken off just before they reach the sides of frame will do ; and two or three side-shoots will be pushed from each leading one, which will require stopping as soon as the fruit appears : all other shoots not required should be rubbed off before they rob the plants. Cucumbers will require more pinching than Melons, as more fruit is taken, and none (except one or two for seed, which rob the plants very much) allowed to ripen. Two Cucumbers 10 inches long are more valuable than one of 20 inches. When the fruits are allowed to become yellow at the ends, they are almost worthless. Heat kept up by linings or otherwise should be not less than 65° at night ; 70° with a little air on all night is not too much. Shutting up the frame early on sunny afternoons, after sprinkling all the beds with tepid water, will promote free growth in newly-turned-out plants. Avoiding cutting winds, is indispensable to success when the plants become established.

Fruit-trees may require disbudding in southern localities before the month is out. If done early and at different times, the tree will receive no check : great quantities of foliage cut off at one time gives a severe check to the trees. All shoots growing out from the walls should be taken clean off.

Asters, Stocks, Larkspurs, Convolvulus, Tropæolum Canariensis (the two latter for climbing on old tree-stumps, or vacant spaces on wall

Marigold (French and African), *Saponaria Calabrica*, *Rhodanthe Manglesii*, *Humea elegans* (for large plants), may be sown in a frame at once, using fine light soil, and covering the small seeds very slightly. These are all useful for decorating borders, &c., and can be procured and grown where ordinary bedding-plants cannot be kept easily through the winter; timely attention, when the plants are fit to handle, should be given to get them pricked out before they become matted; a small panful of each will fill a large space when well managed. Cockscombs, Balsams, Globe Amaranthus, and similar plants, to be grown in pots for decorating glass structures, may be sown now in a little heat; a close temperature will ruin the young plants. To have them sturdy and vigorous, they require plenty of light and air, as well as a little bottom heat. Use tepid water for every plant when in heat, even although they are of a very hardy nature.

Every border and lawn should now have a clean fresh appearance. Grass seeds sown now will start into growth freely, but birds must be kept off, or weeds may only appear, and the vendor of the grass seeds be blamed for supplying a spurious article. Be it remembered that where grass does not occupy the ground, weeds of the worst kind will speedily show themselves. Dustings of guano and soot in showery weather will strengthen the growth of weakly grass. All grass edgings may now be neatly pared, taking care not to unnecessarily reduce the turf edgings, as when narrow they are mean in appearance, and more difficult to keep tidy.

Pot Carnation and Picotees, if they are to be flowered in pots, and plant out those to be flowered in the borders; fresh sandy loam, with a little decayed cow-dung in it, suits them well. Take care of bedding plants, which may be hardening off to be turned out next month; doing it gradually will be the safest way, as sudden changes are very injurious. Dahlias, being tender, will stand very little cold wind. Chrysanthemums growing in small pots should be shifted into larger sizes, as the pots become filled with roots. It is now a good time to take off cuttings for small specimens, or to divide large plants, which is an easy method of growing them for decorating either greenhouse or sheltered borders. In the north they seldom come in early enough for outside work. Ranunculus, and all other tuberous or bulbous plants coming through the ground, should have the surface soil well broken, and a little earth slightly pressed to each stem. Protection from frost (even for those which are hardy) will be of great service in securing a good bloom. Pansies for bedding may be planted out in rich cool soil. Violas Cornuta, Alba, Lutea, and Amoena, are excellent on deep rich soil; and being so hardy, they are easily managed. All the hardier bedding plants may be planted out soon. All plants

for summer flowering in pots should be examined and potted if they have plenty of roots ; some in unhealthy soil may have the ball reduced, and fresh drainage and healthy soil given. Fuchsias, Calceolarias (shrubby), Zonale Pelargoniums, Aloysias, and Heliotropes, are among the leading kinds grown by amateurs. Surfacing healthy roots with rotten manure and fresh sandy loam may be done with advantage, but care must be exercised not to close up the roots from air, as is so often done by unsuccessful cultivators of orchard-house trees. Vines, Figs, and many other fruits are ruined by this kind of surface-clogging. Air into the soil is as necessary as air to the foliage. Manure-water does much for vigorous healthy growth, but it should always be used in a clear state. Soot and sheep's dung make a simple but powerful stimulant ; stir it well for a day or two, and let it settle to the bottom, using enough to colour the water. Any plants grown in peat, such as Azaleas or Heaths, do not require manure-water, though a little clear soot-water can be used with advantage by experienced men. More water will now be required at the roots of plants as the season advances ; give it in the morning, except where structures are subject to drying heat. When nights are warm, the afternoon is the time to water. Keep all surfaces of pots clean and well stirred, and tolerate no dirty pots. Look after insects and other vermin among all plants.

M. T.



JOTTINGS ON THE TULIP.

NO. III.

UNLIKE the Auricula, the Carnation, and the Pansy, and several other suchlike gems of beauty which the zealous and enterprising florist has taken into his hands and heart, the Tulip gives a long season of repose to its admirers, thus affording them opportunities of bestowing attentions to those more tender objects of their affections necessary to bring them successfully through the long and tedious winter to which they are exposed, with its boisterous gales and nipping frosts. But though "buried beneath the clod" for a season, it does not lose its place in the affections of its possessor, who is constantly calculating in what way it will make its appearance when in bloom, and how close it will run its competitors in the race for a silver cup, or how high it will stand in the classes. And even when hidden from view, it is found not to have been inactive, but all through the long winter, on the contrary, it has been occupied in forming its rootlets and advancing the future bloom—thus silently, and without observation, carrying on its own individual work.

In my last paper of "Jottings" I promised to forward a few descriptive notes upon the seedlings raised by Mr Storer of Derby, but the season of bloom proved so very unpropitious that those friends who had promised me their aid were not willing to adventure a description, as the blooms proved entirely out of their ordinary character as compared with previous years, as most growers can doubtless bear me out to their great disappointment, finding a dusky flame replacing the expected fine feather, and an expected flame suffused into an ugly self. This was no doubt owing to the extraordinary amount of rainfall during the previous winter; and should such an excessive amount of colouring matter result from such a cause, fears may again be entertained of a similar misfortune, owing to the present wet winter. We shall see in due time, but trust our fears will not be verified.

And now, while our favourites are actively preparing underground for their next campaign, I should like to say a few words from memory about the merits of a few which I have had the pleasure of seeing of those beautiful Derby seedlings, so truly deserving the highest encomiums that can be passed upon them. I should unhesitatingly have said that Dr Hardy could, without challenge, carry the palm, and stand, as the raiser at one time thought it would stand, No. 1 over all the rest. However, a grower, who is no mean authority, informs me that another variety, during last year, has put in a claim for pre-eminence, and doubtless will succeed in establishing its rightful position. That the "Doctor" is full small in size cannot be denied, but large flowers are apt to get coarse: still a large refined flower must ever stand before a smaller compeer. But a small bloom, when faultless and proportionate, must command, a little longer yet, a position on the bed; and I have seen some faultless blooms of Dr Hardy for some years past, and it will be found a most admirable specimen of what is desirable in a Tulip, with the exception, perhaps, of size, as its colours are of the richest, and its style of marking sharp, clear, and decided in both feather and flame—so that Joseph Godfrey, the "new pretender," must look about him, and put on his best smiles to greet the anxious expectants at the approaching struggle for victory, and will not gain its honours without a sharp contest on the part of the Doctor.

John D. Hextall, another variety, named after a stanch veteran of more than fourscore years who has made his mark high up in the annals of floriculture, is a superb flame of rich scarlet and gold, with the colour laid on in the flame less carefully and attractively than in some of the others—in a word, a little too heavily done, rendering it less sharp and defined than we like to see in a fine Tulip. The season may have had something to do with the excess of colouring. In any stage, however, it may be taken as a most attractive variety.

The third is a break from No. 60, which was considered identical with Dr Hardy by the Derby growers, and which the raiser himself only last season pronounced identical when he saw it in the breeding state; and to those who do not dislike scarlet flames, it will possess many attractions in its fine short cup and sharp defined markings. I would scarcely venture to assert the fact of its identity, although the breeder is considered the same, for to my eye there is a sufficient difference in the broke flower to establish a distinct variety; and I have found, in my experience in seedlings, that two distinct varieties may be originated from one breeder—so closely similar may two different seeds be found in their produce as to deceive the most careful observer until broken. However, there is no doubt of its being a good and useful flower, and, like the rest of these seedlings, very constant in its markings, being a very fine flame.

No. 15 is a very fine feathered variety, having a short cup, rather small, with the colours less brilliant than in some of the others.

Lord Palmerston is another flame, sometimes only lightly flamed according to the season, with a fine large cup, and of a peculiar brown on a lemon ground in its markings.

Mr Mills is a superb variety, with a fine rich flame upon a good yellow ground. This I should pronounce to be amongst the finest of the batch.

General Lee is a beautiful flame; fine short cup and clear markings, and a fine stage-flower, usually coming in good character.

There are at least a score others about which my memory will not allow me to speak a word, and of whose names and numbers I have quite lost recollection; but after next bloom, if spared to see it, I hope to have something to record.

OMICRON.



THE PHLOX.

THERE was a time, and that not very long ago, when the Phlox was scarcely recognised as a florists' flower, but now it holds a deservedly high place in the list. Besides great beauty, it has other desirable qualities. It is hardy and easily propagated; it continues long in bloom, and may be made very effective in a border. By using both the early and late flowering varieties, bloom may be had from the end of June till far on in September. In the present paper my object will be to show how to grow the Phlox for competition, which, of course, is to bring out its best qualities. It must be understood that I write as an amateur cultivator for amateurs, and that the plan of

cultivation which I give is not put forward as the only one by which success may be reached, but simply as one which I have proved to be good, or seen others successfully practise. The experience of an amateur may be of use to many a brother amateur with boundless love for his floral beauties, but wanting skill to make them display all their charms to him. I sometimes wonder that amateurs do not give their experiences oftener than they do. I recollect my own difficulties when I began to grow flowers, and more especially when I began to measure my strength with others on the exhibition table; and if any information which I can give will help a brother, I shall indeed be glad to impart it.

Like most florists' flowers, the Phlox is best grown in beds, so that all the plants may have the same treatment and attention in the most handy way. Any light garden-soil of fair quality will suit them. It is said that they grow best when there is peat in the soil. On this point I can give no opinion, but I know that they will grow very well without it. To make a good beginning, prepare the beds about the middle of March, or it may be later, by digging in a very liberal quantity of well-rotted manure, and breaking up the soil thoroughly. To do the Phlox justice, the plants must have room. Plant them, therefore, 15 inches apart each way. As the young plants destined for the beds will likely have commenced their growth in a frame, or will have been newly bought from the nurseryman, they will require the protection of pots for a short time after planting out, or they will suffer from the keen winds of spring. Give them early in their growth the support of neat stakes, so that their great enemy the wind may not injure them. Yet it sometimes happens, notwithstanding the greatest care, the wind will whip the top off a shoot as clean as if it were cut with a knife. Snails are very fond of the young shoots, and will do much damage if a close watch is not kept upon them for a time.

That the Phlox is a greedy and exhaustive feeder, is shown by its hundreds of rootlets matted closely together. It has also a trick of pushing its roots above ground, and to supply these, each plant may be mulched with a quantity of good manure sprinkled with earth. The Phlox likes water, and in a dry time will take a good soaking every two or three days. If the young plants are strong, good spikes may be got the first year, but it is during the second season that the strength and glory of the Phlox will appear. The bed may either be again manured and dug in the spring, letting the plants remain in their places; or, if the circumstances of the garden will permit, the plants may be carefully lifted and planted in another bed prepared as at first; or, if room is not available, the plants may be lifted and

put aside till the same bed is thoroughly dug and manured, and then replaced. If done early, lifting does them no injury, nor, as far as have been seen, does it retard their growth. When the stems are about 5 inches long, and number more than five or six, *thin them out* these numbers, or fewer according to circumstances, and, with the treatment recommended, the result will be satisfactory. I have seen on a very strong plant as many as eight magnificent heads, but this is an exceptional number with the competitor. By growing two or three beds of Phloxes, and renewing one every year, the competitor ought to be able to hold his own honourably at any exhibition. As the day of show draws near, the competitor must prepare to shade his beauties from the sunshine in order to keep their colours pure. If the flowers are rather forward they will require a fortnight's shading, otherwise a week will do. The whole bed, or only the spikes selected for competition, may be shaded. The best substance for this purpose is scrim which subdues the glare of the sun without causing a very dark shadow. The amateur, who generally is a man fertile in resources, must apply his own ingenuity in the erection of the shade. When placed side by side on the table, the difference between a shaded and an unshaded Phlox is seen at once in the purity of the colours and the greater gloss on the surface of the flowers. The spikes should be cut the night before the show, and put in bottles amongst water; and notwithstanding the objections of some persons, I maintain that Phloxes cannot be better shown than in bottles. They may be ornamented or disguised in any way, but there is nothing equal to them for keeping Phloxes fresh and bright till the end of the show. Before staging, pick off any decayed pips that would make the spike look ragged, and to show their beauty fairly, let them have room on the table.

Phloxes crowded in a small stand or stuck round the edge of a pot full of sand look very miserable, and the chance is they will flag in an hour. In judging Phloxes, shape and size of spike, and the fineness of the individual flowers, are looked to. The more conical and compact the head is, the better, but this condition cannot be got equally good in all. The individual flowers must be circular and flat, clear and clear in colour, and with a distinct eye, if the variety has one. The larger the pip, if it is firm and does not fall back, the greater the value; but if the flower is thin and falls back in any degree, the spike should not make one in a stand. In late-flowering Phloxes, the criterion is somewhat different as regards shape, the head being less conical and flatter than in the early-flowering kinds. In other respects the points are the same. There are hosts of very beautiful Phloxes in cultivation but all are not equally fitted for exhibition. From personal acquaintance, I can recommend the following as a few most excellent show

flowers, and though they are not the newest varieties, they have qualities which will enable them to hold their own against any comers at an exhibition: Early-flowering—Clio, Miss Stirling, Miss Charlotte Duncan, Lady Ross, Lady Sinclair, Purple Prince, Captain Speke, Miss E. Spedding, Mrs K. Howat, Her Majesty, Miss Lindsay, and Mrs M'Gregor. Late-flowering: R. B. Laird, Edith, Souvenir de Soultzmatt, Liervalli, Madame de Wendel, Countess of Breadalbane, Madame A. Verschaffelt, and Mons. Delamare. With good cultivation all these varieties can be grown very large. Clio, for instance, may be grown with a compact head 15 inches long and 11 inches across at the base. Miss Stirling also may be grown very large, though the head wants the closeness of that of Clio. Lady Ross has also a splendid head and brilliant colour. Phlox-growers will be pleased to know that several of the Edinburgh nurserymen have of late been devoting much attention to crossing this flower, and by-and-by we may expect valuable additions to our present beauties.

Phloxes are easily propagated by cuttings, which do not require to be cut over by a joint, as the stem sends out roots at all points. Cuttings will strike at almost any time throughout the season. Those who do not wish to be troubled with early striking may wait till September, and then take off stems rooted and ready, keeping them in pots all winter.

JOHN MORRIS.

MAINS, NEAR DUNDEE.

[Many thanks for this communication. It is such experiences as these that we mostly require. We sincerely hope our correspondent will not forget to render us his valuable aid in the time to come.—EDS.]



TRAVELLING NOTES ON GARDENS IN THE MIDLAND COUNTIES.

(Continued from page 41.)

THE Pinetum is reached by a gradual ascent from the kitchen-garden, and possibly a better situation could not have been selected. It is of considerable altitude, which varies the temperature, not, however, to any great extent, but sufficient in most cases to meet individual requirements.

Observers are aware that several of our most ornamental Coniferæ refuse to grow on a flat surface, or in protected corners: they rather prefer the bleak hill-side, or it may be the pinnacle of a mountain-top. Among these I would notice the king of Silver Firs, *Picea bracteata*. Magnificent as that Pine is, and easy of cultivation, it is rarely to be found in good health and of a full habit.

So far as I could observe, no geographical distribution of genera and species has been attempted, and I think wisely, as, from inequality of growth and other causes, the general effect would be greatly reduced. While the formation of a

Pinetum is either under consideration or has reached a reality, geographic arrangement is almost certain to take possession of the mind; and it may appear to be the correct line to follow, but in practice will be found to terminate in grievous mistake.

The enclosure contains 62 acres, the walks and planting so skilfully arranged that a stranger is impressed with an idea of greater extent. The number of species and varieties of Coniferae are too numerous to allow the insertion of a descriptive list: such would no doubt be both useful and interesting to many. Not being admissible, I shall only introduce the genera, the number of species and varieties, with an occasional comment.

Abies, six species and one variety. There is a magnificent tree of *A. Douglasii*, 50 feet high, and 25 feet in diameter. *Araucaria*, three species; *Arctostaphylos*, two species. *A. selaginoides*, from its habit of growth, is anomalous; its forked branchlets give a curious and interesting appearance. *Biota*, three species and three varieties. There is a beautiful plant of *B. orientalis compacta* over 9 feet in height. *Callitris*, one species. *Cedrus*, three species and two varieties: a very handsome tree of *C. deodara robusta* above 23 feet high. *Cephalotaxus*, three species. *C. adpressa* very vigorous, over 16 feet high. *Chamaecyparis*, one species. *Cryptomeria*, two species and two varieties. *Cunninghamea*, one species. *Cupressus*, seven species and three varieties. The Lambert Cypress is considered by Mr Coleman to be a distinct species; the validity of his opinion I doubt very much. After many years' acquaintance I have not been able to place it higher than a mere variety of *C. macrocarpa*. But on this point we shall not dispute: one thing is certain, that either takes the lead among their congeners. There is here the finest specimen I have ever seen of a full habit, 36 feet high and above 6 feet in circumference round the stem. *Dacrydium*, one species. *Dammara*, one species. *Juniperus*, fourteen species and nine varieties. None in this large collection Mr Coleman tells me, surpasses *J. Phoenicea*, whether in habit or colour: it grows freely in almost any situation, and appears to be a great favourite with Esq Somers, as it has been planted in large quantities; *J. recurva* is also a very graceful Juniper, but unless planted on a cool and somewhat moist bottom, has generally a rusty appearance. *J. fragrans* is not generally met with, although the price places it within the reach of any one. It must have been in the Eastnor collection for several years, as the height is nearly 15 feet. *J. tamariscifolia*, trained to a single stem to the height of 4 feet, and then allowed to form a head, deserves imitation owing to its very graceful habit.

Larix-Kæmpferi, although reported to reach to the height of a hundred feet in China, I very much fear, from what I have seen of its progress, will never become in this country a conspicuous object. This is the more to be regretted as its golden hue gives an additional variety to our indigenous trees. *Libocedrus*, two species; *Picea*, nine species; *P. bracteata*, 8 feet high, among the finest in Britain; *P. nobilis*, 18 feet high; *P. nordmanniana*, 24 feet high; *P. pinsapo*, 23 feet high, the branches 17 feet in diameter; *P. magnifica*, 3 feet high; *Pinus*, twenty-five species; *Don Pedri*, 9 feet high, very handsome and quite hardy; *P. insignis*, 45 feet high; *P. Lambertiana*, 28 feet high; *P. Montezumæ*, 19 feet high, branches 23 feet in diameter; *P. nigricans*, 21 feet high; *Podocarpus*, two species. *Retinospora*, five species; *P. pisifera aurea* is really beautiful, of a golden colour slightly intermixed with green; *Sequoia Sempervirens*, 37 feet high; *Taxus*, five species and two varieties; *Thujopsis*, three species; *Thuja*, eight species. The general character of this genus is rapidity of growth, with the exception of *T. burretiana*, which, as a lawn plant, has few equals, owing to its dwarf habit. *Torreya*, one species; *Wellingtonia gigantea*, 22 feet high, the circumference of stem

inches; *Wadlingtonia*, one species. In concluding my coniferous list, I would just notice a very fine plant of *Quercus glabra*, and presume so fine a plant is rarely to be met with; the diameter of the branches could certainly not be less than from 9 to 10 feet, so unlike an Oak that at first sight it might be taken for a large-leaved *Magnolia*. Here, as in many more places, *Pinus insignis* suffered severely during the winter of 1860 and 1861; no less than 150 were destroyed. The same years proved equally fatal to *Cupressus macrocarpa*; no less than 130 perished, varying in height from 8 to 40 feet. These happened to be planted in a low locality, while the same kinds growing on a higher elevation escaped uninjured.

The residence of Earl Somers is a castellated building, designed by Sir Thomas Smirke, built about 1809, at a cost of £500,000. It is certainly a majestic edifice; more, indeed, like a palatial residence than the seat of an English nobleman. The site is very commanding, on the brink of a hill, backed on the upper side by the pleasure-ground and Pinetum, supported underneath by a massive terrace wall, overlooking a lake of 22 acres. No matter from whatever point, the view is enchanting, more particularly as seen from the castle window, varied to a greater degree, and more extensive. The composition embraces knolls planted with Thorn and undergrowths of different kinds, hills covered with full-grown wood, intervening openings, which give free admission to the bold, swelling mountains many miles off; altogether a combination of beauty which not only delights the eye, but awakens in the mind a train of interesting reflections. It has been said by some one that the character of the scenery should influence the character of the mansion, an idea which I think has been fully carried out in selecting a castellated building. The middle distance to some extent is occupied as a deer-park, which gives the finishing-stroke to the landscape. The boundary-line on the opposite side of the lake has been very much improved within the last few years. Mr Coleman has, by judicious planting in the form of ornamental clumps, and the introduction of single trees, rounded off the angles, and blended in a very pleasing way the margin of the water and the accompaniments of the park. The composition of the clumps is principally Dogwood (*Cornus sanguinea*), Furze, Rhododendrons, and a miscellaneous collection of flowering shrubs. I have long known that *Abies Menziesii* preferred a damp situation, but was taken by surprise to find it growing so freely close to the water's edge, where the soil must frequently approach a state of saturation. In this locality, upwards of two hundred *Wellingtonias* have been planted, and in many cases the central shoots in one year have exceeded 4 feet. This fact is somewhat surprising when we examine the character of the soil, so adhesive that it was necessary to drain and char it to give vent for the water, and to admit the air. There is no Conifer half so accommodating as the *Wellingtonia*; it is not particular either as to soil or situation. We have a plant over 30 feet high, planted on the limestone, with an average depth of earth of not more than 18 inches, of a full vigorous habit; again, in a deep very sandy loam, where the progress is equally satisfactory, and on a marshy situation contiguous to a full-grown wood. In neither case have I been able to detect any difference; perhaps by straining a little we might be able to give a slight advance to the latter. The principal approach to the Castle, after breaking off from the Malvern road, betrays no limitation; it is fully two miles long, passing over for some considerable distance a rather sharp ridge of rock. The embellishments on either side comprise deciduous and evergreen Oaks, different kinds of Yew, a fine collection of *Cratægus* and *Arbutus*, besides many others whose name I cannot now remember. In dealing with these materials, Mr Coleman has studiously avoided unifor-

mity of outline, and has wisely brought out the rugged features of the surrounding country, in a way that only quick sense can imitate.

There was rather a sharp dispute some years ago as to whether the Mistletoe would grow on the Oak: that it will do so is a settled point, as Mr Coleman showed me an instance, which establishes the fact. With a kindness that bespeaks a great amount of liberality, Earl Somers freely admits the public to these beautiful grounds several days in the week, a privilege that cannot be too highly valued by those who can appreciate a rare combination of nature and art.

In conclusion I may be permitted to say—and I never assert what I do not thoroughly believe—that Mr Coleman tolerates no hobbies, as every department receives the same attention, which is easily seen from the order that prevails in the most remote corner. To manage so extensive an establishment, and keep everything in such excellent order, requires both tact and ability. With feelings of gratitude for numerous acts of attention, I passed on to Ledbury, got comfortably seated on the top of what is now rarely to be seen, a four-horse coach, and arrived safely in Gloucester.

ALEXANDER CRAMB.



THE CULTIVATION OF HARDY FRUITS.

THE CHERRY.

(Continued from page 108.)

WE have seen that the soil best suited to the Cherry is a good friable loam, moderately rich, neither too heavy nor too light. The Morello and Bigarreau will, however, do well in, and in fact prefer, a good heavy loam. Mr M'Intosh, in his 'Book of the Garden,' page 538, says that "we have seen the best crops and the healthiest trees we ever saw lately growing in a deep strong clay, while we remember well that the oldest Cherry-orchards in England are planted on deep sandy loams, often resting on a rocky bottom. Generally speaking, however, this tree thrives best on a good deep loam, and worst of all on thin gravelly soils." From this it will be observed that although his experience agrees with my own, yet the best trees ever he had seen were growing upon soil of a very different nature. Those having a soil more clayey than I have recommended, need not fear the result with such a high authority on the side of the soil; yet where such a soil as I have recommended is easily procured, it should be preferred. My preference for a good friable loam is because the Cherry requires a considerable amount of moisture, especially the strong-growing varieties. It is a well-known fact that stiff clay is not retentive of moisture, for water passes rapidly from it, leaving it in a hard and baked condition; also light gravelly soils pass the water too rapidly through them, so that in a few days they become dry and light like dust. Medium soils retain moisture best, for they are open enough to receive it, and retain it for some considerable time; and not this only, but they

are also more open to the action of the atmosphere, which, at night especially, contains a considerable amount of moisture, whereas stiff clayey loams are almost impenetrable to the atmosphere.

The best time for planting the Cherry is in autumn, say the months of September or October. They may also be planted any time during winter from October till the end of March; but the advantage of an early-planted tree over one planted in spring is equivalent to about one year's growth. If the trees get established before winter sets in, they will grow and make splendid wood; whereas if they are not planted till far on in spring, in all probability they will make small useless wood, which may not thoroughly ripen, and consequently will be useless. Before planting, it will be necessary to have plenty of soil ready for the operation, if the natural soil is not to do duty for the young trees. As Cherries delight in deep soil, I would recommend that it be from $1\frac{1}{2}$ to 2 feet in depth. The manure should be good and well decomposed, and mixed regularly from top to bottom of the soil for at least 3 feet further than the roots reach at the planting season. In the case of making new borders, it would be as well only to add the new soil year after year as it seems necessary, so as to provide a fresh supply of food for the young rootlets just as they require it. In the case of planting trees where the old soil is to be used again, I would recommend the whole border to be thoroughly trenched right to the bottom, mixing in a good supply of rich manure throughout. If possible, the cultivator should get a little fresh material to plant the trees with, as it will give them a start from which they will derive much benefit. One good cart-load to every young tree will be found of great value. Whether this be done or not, a large hole should be dug, so that all the roots may be nicely spread out into position. After this the soil may be spread and the hole filled in as already directed, pressing it gently with the foot to give it a firmness about the roots. Mulching for protection from dry weather in summer is very necessary for the first year or two, and in very dry localities it will be found of considerable utility to continue the practice regularly.

The distances which should divide Cherry-trees when planted must be regulated according to circumstances. In some localities they grow into huge proportions, while in others they remain comparatively small trees. In a locality where the Cherry succeeds remarkably well I would recommend that they be planted at distances varying from 20 to 25 feet—a rider and a dwarf fan alternately, so that in the course of a few years the rider would be removed, and the fan left for the permanent tree. Thus each tree would have a space of from 40 to 50 feet of wall to fill. Such a space is filled by almost every Cherry of age in the garden here, upon walls varying from 15 to 17

feet in height. In localities where the Cherry does not thrive so well the half, or even less than the half, of these distances will be sufficient. In planting, the height of the wall must also be taken into consideration, to regulate the distances. Where the Cherry is planted as standard, the large-growing varieties, such as the Bigarreau, should be placed from 25 to 30 feet apart, while the smaller-growing kinds may not be more than 15 to 20 feet apart. If the trees are to be allowed to grow to full size, 5 to 10 feet more may be allowed; but handsome, well-formed, and medium-sized trees, planted at something like these distances, will be more useful and look better than trees of greater proportions.

The situation for the Cherry as a wall-tree must be regulated according to the kinds to be grown. For very early fruit the south wall is unquestionably the best, but for fine fruit I consider the east aspect the best, no matter the varieties. Here we have them planted on every aspect—north, south, east, and west; and I am bound to say the finest fruit and largest crops have invariably been produced upon the trees having the eastern exposure, and these include May Duke, Bigarreau and Morello. It may be as well to notice here, however, that the Morello will not succeed well on a south wall. The next best to the east aspect is the north. Where a long continuation of fruit is required it is well to have a tree or two on the south, and one or two on the north, but we would recommend that the principal stock be planted on the east aspect.

Birds are remarkably fond of the Cherry, and it is necessary to have them protected with nets. Those in common use are old herring-nets which, if not broken, answer the end in view very well. They are about 1d. per square yard, and at this price will last for four or five years, if not allowed to rot and go to waste by lying upon the ground. The best plan to adopt for the protection of Cherries is to plant the border in front of them with either late-keeping varieties of Gooseberries or Red Currants, and cover the wall and bushes under one net. For this purpose it is as well to put in posts about 4 feet high along near the front of the border, and along the top of these nail a rail for the net to pass over; while another rail should be nailed along the bottom, having hooks or nails to fasten the net to. Along the coping of the wall there ought to be hooks, to which the net should be attached, and when drawn over the top rail and fastened to the bottom one, both Cherries and Gooseberries or Currants are thoroughly protected from the birds.

As has been already hinted, the exudation of gum on the stems and branches is the only disease to which the Cherry is liable. The causes I have already given for this are undue cutting of root or stem

or ~~in~~jury from the knife, hammer, or nails at the pruning and training seasons. There is no thorough cure for it, so far as I have been able to ~~ascertain~~, but I would recommend that all affected branches be at once removed. As prevention is better than cure, the best method is to ~~avoid~~ everything which would in the least tend to its production.

The insects that are the greatest enemies to the Cherry cultivator are the red-spider (*Acarus telarius*), from the want of moisture at the roots; the *Aphis cerasi*, or Morello Cherry-louse, which is said to be the result of too much moisture, but which is easily destroyed, either by fumigation, or by syringing the tree with tobacco-water. The *Tenthredo cerasi* is sometimes injurious to the leaves of the tree, into which they fold themselves in order to undergo transition from one stage of existence to another. The *Cossus ligniperda*, or goat moth, in its caterpillar state, is very destructive to the trees at times. The only cure for the two foregoing is to gather them from the leaves with the hand, and have them at once destroyed.

JAMES M'MILLAN.

(*To be continued.*)



NOTES BY A COTTAGER ADDRESSED TO COTTAGERS.

BEING a great enthusiast in the cultivation of flowers in my own small way, I hope you will allow me to occupy a portion of the columns of the 'Gardener,' as I feel it to be a duty due to my brother horticulturists, belonging to the same class as myself, that I should say a few words to them on matters relating to the garden.

In the first place, I wish at the commencement of my remarks to state the pleasure that is to be derived from the cultivation of flowers. I am a mechanic by profession, and I have no chance of seeing my plants from six o'clock in the morning till six in the evening, except on Saturday, when I get a half-holiday—a blessed institution for the working-man; and that is the day in which all great alterations are done in my garden. As a matter of course, at this time of the year little can be done; but when daylight serves, I make all the use of it I can. In the evening, on my return from my labour, I take a look round to see what accidents have happened during my absence; then I take a hurried meal, and get out among my plants again, and then it is that the pleasure of cultivating plants is experienced. I wish I could command the language by which to describe the pleasure I feel in watching and nursing the various things I cultivate in all their

various stages of health and disease. To a man of moderate capacity there is by this means opened up a grand lesson, by which he can be brought to reflect on the wonders of creation, and the manifestations of goodness made by the great Omnipotence towards man. By means of the naked eye we get some idea of the exquisite structure of plants and flowers; and how much do these exemplify the wondrous skill shown in the creation of all things! When more closely viewed through the medium of a powerful microscope, I think there are very few occupations that have such a tendency to refine the feelings and elevate the mind as a taste for horticultural pursuits.

I have written these lines as an experiment, by way of testing my ability to interest and instruct my own class in matters relating to the garden. If agreeable, I shall be happy to furnish matter which will be the results of my own experience among plants, if so be they should prove of interest to the readers of the 'Gardener.'

T. E.

[The author of this paper, which we have had to cast in a rather different form than that in which it came into our hands, is what he represents himself to be—a hard-working mechanic, and a most devoted disciple of Flora. He has, to our knowledge, gathered around his cottage a very unique collection of rare herbaceous plants in something like 150 species, all properly named, besides Roses, Gladioli, Dahlias, Pansies, &c. &c. In addition to which he has built himself a greenhouse and numerous frames, wherein he cultivates greenhouse and half-hardy plants, &c. He is a leading member of several village floral societies; and he expresses great anxiety to diffuse a taste for flowers amongst the class to which he belongs, believing, as he states he does, that it would make them better workmen, better husbands, and better fathers, and keep them from the beer-shop and public-house. He has volunteered to give us a series of papers on this subject, addressed to his fellow-mechanics, a great many of whom we are proud to have as readers.—Eds.]



NOTES ON HARDY HERBACEOUS PLANTS.

PAPAVERACEÆ.

THIS order does not include many plants of much ornamental value. It is much more famous for its medicinal qualities than for floricultural importance, yet it includes not a few plants remarkable for producing large strikingly-showy flowers, some indeed imposingly brilliant, and handsomely formed or interesting leaves. The flowers, however, in most cases, are of a somewhat fleeting character, but it should be stated that many of the best produce a very prolonged succession of bloom, which handsomely compensates for the brief duration of individual flowers. The larger number of the species are either annual or biennial plants, and do not therefore invite our attention at present; but some of the perennials are so distinctive and handsome in charac-

ter, that notwithstanding the short duration of the flowers, no really good collection of hardy perennial plants can be considered complete without a few of them in its ranks, and only a few of the best are here selected. As a rule, all the Papaveraceæ luxuriate best in light rich gritty loam ; but the soil should be well drained whatever its texture or components may be. Propagation is effected by division in spring or by seeds. The latter method, in the majority of cases, is the best, because, owing to the thick fleshy rootstock which most of the larger growing Poppy-worts form, division is not always a safe or successful process. Sow the seeds in March, in small pots, in a cold frame or in slight heat. Only two or three seeds may be sown in each pot. It is characteristic of the order generally that the plants at first make only a tap-root, which, when broken—and it is not easily avoided in the process of pricking off, should it be necessary to resort to it—does not readily emit fibres or repair itself ; it is better, therefore, to sow very thinly in small pots, and afterwards to thin away the weaker plants, leaving only one or two of the strongest to occupy the pot, and be potted on if necessary, before finally turning it out into the place it is to occupy in the open ground.

Argemone, Prickly Poppy.—This is a genus of few species, the greater number of which are either annual or biennial plants, and furnishing, so far as I know, only one perennial worthy of cultivation.

A. grandiflora, Great-flowered Prickly Poppy.—This species grows from 2 feet to 3 feet high in bold, somewhat coarse, but rounded habit, producing large, smooth, wavy leaves, toothed, and in form like some of the familiar Thistles, the teeth being furnished with bristling spine-like hairs. The flowers are large, pure white, in numerous flowered panicles ; flowers in July and August ; native of Mexico. It is best adapted for culture in the back lines of warm, sheltered borders, or among shrubs in beds or borders.

Chelidonium, Celandine.—This is one of the most free and continuous-flowering genera in the order. It is not of the most showy description, but is always interesting and pretty. It succeeds best in partial shade, and is useful for introducing into open woods and naturalising on shady banks where the vegetation is not of too encroaching a nature. Propagate by seeds in the open ground, in March, the double form by division in spring, or both by the latter means.

C. majus, Larger Celandine.—It is not so much for the species in its normal form that this plant is selected, as for two varieties of it of more value than itself, floriculturally speaking. The one is *C. M. flore pleno*, a double-flowered variety, differing only from the simple form of the species in that particular. It grows about 18 inches high, in soft rounded outline, producing pale-green pinnately divided leaves.

The flowers are numerous, consisting in the simple form of only two sepals and two petals, but in the double variety the petals are indefinitely increased. The other variety is *C. M. variegata*, and is distinguished from the species by having the foliage marked with cream yellow. There is also a white-flowered variety, which may not be considered much of an acquisition where the others are cultivated, and there is a number of botanically interesting varieties, the species being of a variable nature; flowers from April and May till October; native of Britain.

Meconopsis.—This is a very interesting and beautiful genus. The species are few in number, and, with the exception of the first of the two selected, are very rare plants in cultivation. They delight in a rich light sandy loam, and succeed best on rockwork in partial shade. Propagate by division or by seeds in spring: the latter method is the best and most certain of keeping up stock, especially of the last of the selected species.

M. cambrica.—This species grows erect about a foot high, with pinnate, pale green, slightly hairy leaves on long stalks, the segments deeply cut. Flowers on long stalks, large, pale yellow. Flowers from June throughout the summer. It must have a good depth of soil on rockwork, but well drained, and be well supplied with moisture in the growing season. Native of western Europe, also Ireland, Wales, and western counties of England.

M. Wallichii, a species of grand interest and beauty. It grows erect, 3 or 4 feet high, the stems and leaves somewhat glaucous, and densely clothed with long rusty hairs. The lower leaves are 9 inches or a foot long, and stalked, but diminish in size, and ultimately become stalkless as they ascend the stem. Flowers large, pale blue, nodding on short stalks, and arranged in long terminal leafy racemes. Flowers in July, and throughout the remainder of summer and early autumn. Native of Sikkim Himalaya. It is with some diffidence I recommend this grandest of *Meconopsis* as a hardy herbaceous perennial. Some eighteen or twenty years ago it was first introduced into this country, and flowered at Kew, but died immediately after. Once again, eight years subsequently, it was grown at Kew; and the stock raised from the imported seed was considerable, and was distributed among several botanic gardens in this country, a few being reserved for culture in the herbaceous department at Kew. Three or four of those reserved were cultivated under various treatment—in pots in a cold pit, in the open ground along with other *Papaveraceæ*, and in a small reserve ground attached to the herbaceous department, intersected with hedges; and here it was grown in pots plunged in the soil, and also planted out, shaded also and exposed to the mid-day sun. Th—

measure of success was greatest in the last-mentioned circumstances, and least in the pit. The plants in pots plunged in shade were by far the most vigorous, and flowered beautifully; but in every case the plants began to show symptoms of decay as flowering ceased, and they ultimately died much in the way of biennial plants when their mission is fulfilled, and without leaving seed by which to make a fresh start the following season. I was not so fortunate as to hear the nature of the result at the few places to which the surplus plants were sent; but having heard nothing since of so interesting a plant, I am obliged to conclude that no greater success attended its culture elsewhere than that just described. Whether biennial or perennial, therefore, is a problem yet to be solved; but in either case it is a splendid and interesting plant.

Papaver, Poppy.—This group is a large one, consisting mainly of annual and biennial and a few perennial species. A small selection of species only is needed to embrace the best and most distinct. The taller-growing species are best adapted for ornamenting the back lines of mixed borders and for planting among shrubs to give colour, in which latter position they produce a very fine effect. The dwarfer species are suitable and elegant ornaments for rockwork or for the front lines of mixed borders in moderate shade—that is, their beauties are longer enjoyable in a somewhat shady position than in one fully exposed to the sun. They are propagated by division, and by seeds in spring.

P. alpinum, Alpine Poppy.—This is a beautiful dwarf-growing species, producing handsome pinnately-divided leaves somewhat glaucous, and a profusion of leafless, roughly hairy stems, each supporting a solitary large bright yellow flower. Flowers in June, July, and August. Height about 1 foot. Native of the mountains of Austria. A variety named *P. a. miniatum* is very beautiful; the flowers are pale yellow in the centre, shading into deep orange-red on the margin.

P. bracteatum, Great Scarlet Poppy, syn. P. pulcherrimum.—This is a splendid tall-growing species, producing dense rounded masses of long pinnately divided leaves, roughish to the touch above and below. The flower-stems are almost leafless, very rough to the touch, and rise to the height of 3 or 4 feet, supporting each an enormously large bright reddish-scarlet flower, the petals and sepals marked at the base with a large intense dark-crimson spot. Flowers in June and July. Native of Siberia.

P. pilosum, Hairy Poppy, syn. P. olympicum.—A very handsome species, producing large orange or brick-red flowers, the sepals and petals being marked at the base with a dull white spot. Flowers in

May, June, and July. Height about 18 inches. Native of Greece. Best adapted for culture on rockwork.

P. pyrenaicum, *Pyrenean Poppy*.—A most interesting and beautiful diminutive species. It forms dense prostrate masses of foliage, above which it throws its beautiful, large, orange-yellow flowers an inch or two. It is a choice ornament for rockwork, and should have a moderate but well-drained position. Flowers in June, July, and August. Height 6 to 9 inches. Native of the Pyrenees.

Sanguinaria, *Puccoon*.—This is a pretty genus comprising only one species. It is not uncommon in many gardens in the country, but should be more generally cultivated than even it is. It grows freely in almost any good garden soil, but prefers light, rich, sandy soil. Propagates readily and successfully by division in autumn or spring.

S. canadensis, *Canadian Bloodwort or Puccoon*.—This is an interesting and pretty spring flowering plant. The leaves grow rather erect and are dark-green and sub-glaucous above and almost hoary beneath. The flowers on short stalks are white with a tint of pink, and are very profusely produced in March and April, or later, according to season and locality. Height from 6 to 9 inches. Native of N. America. The variety named *S. C. major* or *grandiflora* is the best, being a more robust plant, with larger flowers. Succeeds in any position, on border, bed, or rockwork, but lasts longer in a somewhat shady place than in one more exposed.



GARDEN RECORDS.

NO. IV.

MESSRS WINDEBANK & KINGSBURY, BEVOIS VALLEY AND MOUNT NURSERIES, SOUTHAMPTON.

FOR years past this firm has been famous for the beauty of their strain of *Primula Sinensis fimbriata*. It is a fact that from Southampton have come forth types of this beautiful spring flowering-plant, showing an extent of variation quite incredible by those who are unaware of the marked progress being made in its improvement. During the last week in February we had the opportunity of looking over Messrs Windebank & Kingsbury's collection of flowers, and we are compelled to admit that nothing we have looked upon in the way of *Primulas* this season can compare with what may now be seen at their nurseries. Both at their Bevois Valley, as well as at their Bevois Mount Nurseries, they had large groups of *Primulas* arranged for inspection, and of these we will now endeavour to record our impressions.

We may here state the Bevois Mount Nursery is an outgrowth of the one established at Bevois Valley some years ago. At the latter place there is but room for glass; at the former there is space for a general nursery stock, besides a great quantity of glass. In a long, low, span-roofed house were the *Primulas*, arranged

single glance was sufficient to show the extent of variation now to be seen among them. Some years ago, and a red leaf-stalked *Primula* would be certain to produce rosy purple-coloured flowers, and plants with a white leaf-stalk, white flowers. The work of improvement has changed this, and now a plant with red leaf-stalks will be found to produce flowers of the purest white, though high-coloured flowers have not as yet appeared on plants bearing white leaf-stalks. Also, all striped flowers—and of these there are now some very beautiful things—are borne by plants having leaf-stalks of the darkest colour. Let us note a few distinct types of variation: one plant with white leaf-stalks bore flowers tinted with rose, the edges slightly deeper; there were also two very pleasant carmine rose-coloured flowers, one deeper than the other, and these appear to invert the usual rule of high-coloured *Primulas*—for, instead of opening of a bright tint, which becomes pale as the flowers age, these open pale-coloured, which intensifies as the flowers become older. One of these also had very handsome fern-leaved foliage. Then there were flowers of very deep crimson-purple hues, and some white as the driven snow. There was a grand strain of white flowers, the habit of the plant unusually dwarf and compact, with noble trusses of flowers shown well above the foliage. Then there were white flowers, having the usual lemon-coloured eye, but unusually large; and round this was a dark-brown ring, not unlike the cup of a pheasant-eyed *Narciss*; flowers of varying tints also had the dark ring. Blush flowers—really blush flowers, not merely become so from age—were very fine indeed, of large size, fine substance, stout, and splendidly fringed; and there were also varying shades of these—some only delicately tinted, others much more deeply.

In addition to *Primulas*, there were in this house a lot of standard plants of Unique *Pelargoniums*, on stems from 18 to 30 inches in length, some as much as three years old, and in bloom all the year round. They are found invaluable for table-decoration. There was to be noticed much variation of colour among them, from rich blood-crimsoned hues to tints of bright lilac. Mr Windebank informed us that many of these were sports, and that the Unique *Pelargoniums* were found to be singularly sportive in character; and what is more singular, they also sport into different types of foliage. One plant had on one side of the large head deep crimson flowers, on the other pale violet. This class of *Pelargoniums* are always of great use for furnishing cut flowers.

In a lean-to Peach-house were a capital lot of *Aucubas*, covered with berries, and a fine lot of *Lilium auratum* starting into growth. We were informed that they are kept all the year round in pots, and only shaken out when repotted. As raisers of variegated *Pelargoniums*, Messrs Windebank and Kingsbury are well known, they having originated since very fine kinds, which have been distributed by others. One of their gold-and-bronze varieties—The Rev. W. F. Radclyffe—bears an excellent character as an effective bedder; but this they have recently improved upon in a variety named Russell Gurney, which we saw, and very promising indeed it looked. This was in a long, low span-roofed house used for propagating purposes, and in which there were great quantities of young bedding plants of various kind.

Leaving the Bevois Mount Nurseries—the locality being noted in the ‘Chronicles of Southampton’ as the scene of the doings of the once-famed Sir Bevis, and the giant Ascupart, and whose full-length portraits can be seen in the old Bargate of Southampton—we proceeded to the Bevois Valley Nursery, immediately contiguous to the river Itchen, and liable, from its low situation, to be occasionally inundated by the overflow of the sea. Here we found a span-roofed house entirely filled on the one side with *Primulas*, on the other with variegated *Pelar-*

goniums. Here, too, the Primulas were very fine and distinct. Some, with fern-leaved foliage, had very rich shades of dark carmine. There was also a very pretty and pleasing shade of dove-colour to be seen, quite charming in its way. Among these very pretty striped flowers could be seen a marked improvement in the points of size and quality, and some had broad flakes of bright carmine. Newer types were represented by dark carmine flowers, dashed with violet-pink, flaked with rose, and having a large lemon eye, with a pale ring round it; pale fleshy carmine, very handsome; a purple-ground flower, prettily striped and splashed with white, borne on a fern-leaved plant with red leaf-stalks, perhaps one of the greatest novelties yet raised; a good puce-coloured flower on a plant having green leaf-stalks tinged with red; and two others having the flower suffused with lavender, and margined with white, and a white ring round the eye. To any one interested in the Primula, a visit to these nurseries just now would indeed be a treat. The Bevois Valley Nursery is about half an acre in extent; that at Bevois Mount from 3 to 4 acres.



MY POTATO TRIALS.

WITH the opening of the month of March I commence my planting operations, and thus lay the foundation for the season's trials of this noble esculent. Where the Potato-fancier essays to gather together for his pleasure, and possibly his profit, a large collection of Potatoes he will find one of the most difficult things he has to do consists in the gathering together from all parts of the country, quantities, more or less of all the best-known kinds, without the possession of which his trial would be imperfect and his experiences uncertain. The Potato connoisseur has now become almost a horticultural necessity. His duty (if his work and labours be recognised as such) consists in sitting in judgment on the productions of others, and in testing them by known and approved kinds. He should have no trade bias, and should strive only to put prominent the good things in his collection, come from whence they may, remitting the indifferent ones to the fate they deserve—that of well-merited oblivion. To such an one a really good Potato is an art-treasure, over the possession of which he gloats, and he is proud of it; but from whence it came, what matters it? There it is, and the world shall know that it exists, and so be made available for its use in due time. I do not, however, assume to myself the possession of all that disinterestedness that may be said to characterise the true connoisseur. Nevertheless, I hope and purpose, as far as in me lies, to give in time to come the most fair and honourable testimony can bear to the relative merits or demerits of all the kind of Potatoes that have been from various sources committed to my care for trial during the present season. I shall start this year with over a hundred

assumed varieties, nearly the whole of which I believe to be distinct, although the points of difference in some are not very easy to determine. Through the kindness of valued friends, I have been enabled to exchange largely with them, and thus my collection has increased this season by some twenty-five new varieties, amongst which are several of the new American kinds, some of which bid fair, by their cropping qualities, to become ultimately famous market Potatoes for the use of the million. The gathering together of this large number of kinds has not been the work of a year or two, neither is the experience that will be called upon to superintend their growth and rate their qualities limited in its extent. For several years I have gathered about me a large number of varieties of the Potato. Many of the best of my earlier subjects I still continue to hold stock of, but the additions of both last year and the present are so great that I feel I am called upon to enter on my next trial with much heavier responsibilities, knowing that I hold one of the best as well as most extensive collections of Potatoes to be found in the kingdom. To enter into a minute account of the various kinds I have, would be just now as useless as it would be tedious to the readers of the 'Gardener.' The time for that will come by-and-by, when, with the names of each kind, I trust to be able to furnish also a true and correct account of the good or bad qualities of the several varieties, as developed here in the south of England.

My trial-ground is an open field, situated upon the brow of a hill, and fully exposed to all the various climatic influences that arise from a near approach to the sea. The soil is a moderately good yellow loam of about 24 inches in depth, beneath which is a deep substratum of gravel that drains the soil so effectually as to make it very dry in the case of a hot summer. My trial-borders range to a length of over 200 feet, and are about 14 feet in width. I select for my purpose from each kind twelve medium-sized tubers, all of which have been so cared for previously that they have just started into growth, and as a consequence I am in no fear of blank rows. The soil, which I previously mentioned as being but moderately good, has had spread over it a light dressing of manure, consisting chiefly of road-droppings. This is by no means a potent manure, but it answers my purpose, as by it I am enabled to get the character of each distinct variety correctly developed; and as I wish to secure clean samples rather than large ones, which are too frequently accompanied by a luxuriant growth of haulm that is by no means desirable, I am content to adhere to moderate culture and road-droppings. The width at which the rows are placed apart is regulated somewhat by the habit of growth of the variety, but I find, under my mode of culture, that 24 inches is enough for moderate-growing kinds, and 28 inches for

those of a more robust habit. The ground having been previously broken up, a steel fork accomplishes the digging with ease at this season of the year. I use a spade to strike out the drills into which the Potatoes are laid. These are of such a depth as to allow about inches of soil to lie upon the tubers when planted—quite enough under any circumstances, as it does not produce that weakening of the shoot that so commonly results from deep planting. Each kind when planted is carefully marked with a numbered label, and as soon as the work is over, each row is similarly numbered in a book, and the name of the sort it contains placed against it. Here are made all the notes necessary at the various stages of growth, and the final results entered as well; thus the displacement of a label is guarded against, and actually becomes a matter of little moment. When the haulm has reached the height of about 6 inches, I go carefully through each row and pick out all the weak shoots, leaving only about three of the strongest. By this process the number of tubers is reduced, but the size of the remainder is increased. Then comes the hoe, and gives the soil a good surface-stirring; and about a week afterwards, a moderate earthing-up is given, after which, beyond noting the growing appearances and instituting comparisons, there is little else to be done until the arrival of that important time when the fork is once more brought into requisition, and the generous earth is made to yield up its treasures to reward the labours of the patient, industrious, and careful planter.

The storing of Seed-Potatoes during the winter is a matter of no small moment; indeed, much of the success of a trial depends upon the manner in which the tubers have been prepared for it. A well aired shed, or a building specially devoted to this purpose, fitted with shelves in sufficient quantity to take the whole of the stock of seed, is the best place to keep them in. Internal dryness, and plenty of air when frost does not prevail, are essential; but even a few degrees of the latter will be productive of no injury where all damp is excluded. In such a Potato-house the work of thoroughly examining its contents at any time is a matter of ease; and in no case will the tubers become so much sprouted as to be productive of injury. Their removal to the garden should be accomplished in flat boxes, into which they can be laid without damaging the young growth, and from these they can be taken for planting with great ease. To those who are limited in accommodation for storage space, a number of herring-boxes will prove of great service, as these are always sufficiently open at the bottom to allow the air to pass up through the Potatoes placed in them. These boxes can be stacked one upon the other in any dry shed or outhouse, and may be frequently removed, so as to have the bottom ones occa-

sionally put at the top, and *vice versa*. They also give an easy mode of transit to the planting-ground. And now, fellow-readers, I close my Potato gossip in the hope that in a few months I shall be able to resume it to our mutual advantage.

A. D.



IRESINE HERBSTII.

I FIND this charming plant, when used for bedding purposes, subject to many complaints, which, from my own experience, I think are quite undeserved. The Iresine, in some situations, is said to be deficient in colouring, and especially to be wanting in freedom of growth. A narrow border here last season put its merits fully to the test; and after two seasons' trial, I think it is justly entitled to a prominent place as a bedding-plant. This border was quite a treat of itself, and I believe a description of it may not be out of place. Beginning with the front line, which was of *Arabis lucida variegata*, we next had a line of Blue Lobelia, then Golden Feather Pyrethrum; the next was Iresine and variegated Veronica Andersonii, the back line of Mrs Pollock and Silver Chain Pelargoniums alternated. But the Veronica might very well have been dispensed with, as it was scarcely ever seen amongst the Iresine, which was a perfect mass of splendid colour, and every plant nearly 2 feet through. Situated as the flower-garden is here, lying close to the base of the Cheviots, and exposed to every wind that blows, the north excepted, the result was beyond all expectation, and gave sufficient proof of its adaptability for bedding. The season of 1868, however, was not so satisfactory; but that was an exceptional season, and the unusual drought easily accounts for its not doing so well. The Iresine, however, I consider one of the most useful and ornamental plants we have for the flower-garden, as it gives us a colour we should otherwise be without; and now when foliage plants have almost superseded flowering kinds, I should not like to be without it, and more especially when it is so easy of propagation that it can be got up by the thousand in a short time. The system we have in propagating is to place the cuttings in pans of sand and water, striking by sun-heat, with the aid of a slight bottom-heat. The best plan is to have a few old stock plants, as I have found it almost useless to make cuttings of it in autumn, as it is but a slight chance that they will strike, and even then will not make so good plants as those got up from spring cuttings. After striking, which will only take a few days, pot them off into boxes, with plenty of half-decayed leaves in the bottom; if

then they can be placed in heat for a short time, so much the better. The leaves I consider to be essential to success, for the Iresine has a natural liking to leaf-soil, and will thrive better in pure half-rotten leaves than in any other soil whatever. If time can be spared at the season of planting, it will amply repay to dig up the ground the Iresine is intended to occupy, for the purpose of incorporating a liberal allowance of leaf-soil, for by giving it the food it seems to enjoy, the influence of the atmosphere in regard to its colouring may be partly overcome. At least, let no one despair, because it is too good a plant to be rashly cast aside as useless for outdoor decoration; and I trust that, in making these few remarks, they may prove to be of service to those who may not have been quite so successful with it. R. S.



TABLE DECORATIONS.

IN treating of the above subject, my object is not so much to treat on the arrangement of what are known as the Marchian stands, as used for the dinner and exhibition tables, but simply to state what I have done in this way for myself, guided solely by my own notions of taste, and the materials I had at hand for use.

Last season, the stands we used for the decoration of the dinner table here were in constant use for something like eight months, and to keep these trim and nice is not only a heavy tax on one's time, but also on one's resources; however, having given entire satisfaction, I consider I was amply repaid for my trouble. As the provision for table decorations is becoming more and more a task allotted to the gardener in an establishment, I venture to detail what I have done, and the agents I have used, for the sake of those who may have a similar work set them, and would be glad to receive some suggestions in regard to the matter.

I will first observe that Ferns and Mosses are among the most useful things for the decoration of the table, and even such a common thing as the Male Fern (*Lastrea Filix-mas*), which may be found in the hedgerows in almost every parish, is of great value for forming a fringe to the dish of a stand or centre piece. Equally valuable is the native Welsh Polypody (*Polypodium vulgare Cambricum*), which makes a nice change with the Male Fern, the handsome fimbriated edging to the fronds adding to its worth. It is by no means so common as the Male Fern. That charming greenhouse Moss, *Selaginella denticulata*, is another useful thing for the purpose. I use plants taken out of small pots to fill the base of a stand, and fill up between

the balls with silver-sand, using about four plants for the purpose ; and with the sand I mingle some powdered charcoal to neutralise the effect of any offensive smell that will sometimes arise after the plants have been placed in the sand several days. After a sprinkling has been given to settle the sand about the roots of the Moss, the branches should be pegged down neatly with small hair-pins. If watered about once a-week, the *Selaginella* will grow very nicely, and keep beautifully green for two or three months together. Scarlet *Pelargoniums* and other flowers can be stuck in the sand by their stalks to give a finish to it. That popular form of the Maidenhair Fern, *Adiantum cuneatum*—perhaps one of the most lovely of the Ferns, notwithstanding that it is common, and always a great favourite with the ladies—is also of great value, and makes a beautiful fringe for the top dish of a design, it being so light and graceful. Some five or six years ago, Mr Charles Turner of Slough was a competitor at one of the Crystal Palace exhibitions with a vase of Roses, and by way of giving a finish to his vase, he used fronds of the Maidenhair Fern among his Roses, which was a great improvement on the formality of a bunch of this favourite flower, but the vase was disqualified by the judges in consequence. Now, it is the custom for the schedule of prizes to state Ferns can be used, and no disqualification follows as a consequence ; and the same thing also holds good at South Kensington, as well as at Brighton.

There are certain plants that are very useful for twisting round the upright stem of a stand used for the decoration of the dinner-table ; and branches of these should be stuck in the sand, and then be neatly and elegantly twisted round the stem ; and a few ties should be placed up the stem at intervals, to keep it in its place—fine thread or wire can be used. The Japanese Honeysuckle, *Lonicera aureo-reticulata*, is one of the best things for the purpose ; so is *Dioscorea battatas*. The common Ivies I find to be too heavy. *Tradescantia zebrina* is a nice thing to hang over the top dish, especially if some cuttings are placed in a 32-sized pot in some light sandy soil, and allowed to hang over the sides of the pots till rooted, and then shaken from the soil and laid round the dish, with a little silver-sand about the roots. The heads of the plants should hang over the sides, and they will grow freely, and last for six months if required. Of pendulous growth, and variegated foliage, the effect is charming and effective. The silvery-leaved *Centaureas candidissima* and *argentea vera* make a nice change, and the leaves can be used to make a layer inside the Ferns in the bottom dish. Besides the scarlet-flowering *Pelargoniums*, the white-flowering ones, like *Madame Vaucher*, as well as the sweet-scented kinds for the perfume the leaves yield, are also very desirable. The flowers of the

scarlet and yellow Nasturtiums last a long time in the wet sand. Violets make a nice change in their season, and especially Roses; the flowers of these should be cut young in the morning, when the dew is on them.

Such stands as these are never complete without light-green foliage of some sort or other, such as the different kinds of ornamental grasses in their season, and the tops of some of the meadow-grasses in the autumn. In the same way sprigs of Asparagus from the kitchen garden are very useful; so is the foliage of Tamarix Gallica, a hardy deciduous shrub; also Humea elegans, and suchlike. Variegated plants work in well; the Iresine with its handsome mottled red leaves keeps well in the sand, so do Coleuses and variegated Pelargoniums of the latter, such as Mrs Pollock, and the white Ivy-leaved kind, l'Elegante. Then there are blooms of Gladioli, Asters, Chrysanthemums, and many others, with stiff stalks to support them. In a general way, many of the flowers will last only one day; and I change the whole of them three or four times a-week, but make a rule of looking at the stands over every other morning. The sand should not be so saturated as that the flower-stems will not stand erect in it, or they are apt to fall out when the stands are removed from the table.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



THE MUSCAT HAMBURGH GRAPE.

A REMONSTRANCE.

IF the natural sweetness of my disposition did not restrain my vindictive feelings, I should certainly enter an action against you for defamation of character, for on page 96 of the 'Gardener' you have said, "Our experience of the Muscat Hamburg does not warrant its general recommendation; it evidently is a shy Grape and requires peculiar soil." This I consider a very serious charge—so serious that a vindication of the truth demands that I should reply to it. Last spring, just at the time when I had made a growth of 4 to 7 inches, and nothing but the duplicate breaks had been taken off, a writer in 'Hibberd's Magazine' passed the same slight upon my character as you have done. My kind protector, magazine in hand, marched into the vinery, and calling the young man in charge to my assistance, requested that the number of bunches upon each Vine should be counted. Well, upon many of the breaks there were *four* bunches, others had *three*, and very few less than two, while such a thing as a barren break was not to be found at all. Now, when totalled up and divided by the lineal yards of the Vines, what do you think was the result? Why, an average of more than one bunches to the yard; and if that is not sufficient to satisfy any reasonable being, I can only say that he must have a most elastic and capacious conscience. Can you this shy bearing? Oh, I think I see the blush mantling your cheeks! as well it may, to thus malign the best and sweetest of Grapes.

Now, as I will not give you the slightest room for cavilling, I will just tell you that, whether growing upon my own roots or grafted upon the Black Hamburgh, my prolificacy was just the same, though I must confess that, wedded to the stronger constitution of the Black Hamburgh, my bunches are much improved in every respect, and that, in fact, to grow me in my best form, the assistance of a stronger stock is indispensable, and the Black Hamburgh I like the best. Do not, however, run away with the idea that I may be united to any strong-growing mate. If you do, you will run into an error as great as that which prompted you to speak despairingly of me, and I will tell you why.

Several years back a friend who had a coarse-growing white Grape from Spain determined to graft me upon it. He did so, and the fine rod which I produced the following year bore fruit; the few bunches left were large in size, superb in colour, and, to all appearance, perfect; but—tell it to your readers, make it known throughout the land—the flavour was so much like the condemned Spanish Grape that a committee of connoisseurs, who knew me well, could not tell who or what I was, so much was my flavour deteriorated. At the same time, Grosse Guillaume or Barbarossa was grafted upon the Black Hamburgh, and was so much improved in flavour that not one of the same committee knew it. For that reason I at once plighted my troth to the Black Hamburgh; and if in any case I am not as large and free-bearing, and much superior in flavour to that esteemed variety, it will be because I had not the aid of its vigorous constitution. From this you will perceive my proclivities are social. I do not like to live alone; but if you unite me to the Black Hamburgh, as I have before suggested, you will find me in every respect a matchless grape. I grant that my constitution is delicate, and that upon my own roots I am frequently ashamed of myself; but there is no such cause for disappointment when I am united to the Black Hamburgh. If you have any doubt upon this subject, I can only say that if you or any of your friends come into Nottinghamshire at the right season, and will call upon either of my esteemed patrons, J. R. Pearson at the Chilwell Nurseries, or W. P. Ayres of Nottingham—if the sight of me, as grown by those gentlemen, do not convince you of the injustice you have done me, why, my name is not THE BLACK MUSCAT OF ALEXANDRIA, *alias* MUSCAT HAMBURGH.

NOTTINGHAM, Feb. 18, 1870.



NEW POTATOES.

WE are indebted to Messrs Hooper and Co., Covent Garden, London, for the opportunity of giving illustrations of two new Potatoes of American origin, recently imported to this country, the advent of which has been heralded by glowing accounts of their high-class quality. It will be in the recollection of many of our readers that the Early Rose Potato was distributed last season at what appeared to be an unusually high price, but which sold freely nevertheless. It was tried in many parts of the United Kingdom, with varying success, and, as is common to new things generally, whilst some cultivators severely condemned it, others as enthusiastically praised its fine qualities. If the demand made for it just now can be taken as evidencing its worth, it must be held in high esteem, notwithstanding so much hostile criticism, as the sale is said to be astonishingly large. Respecting the Early Rose and the new varieties figured by us, Messrs Hooper & Co. state: "The Early Rose was introduced with considerable *éclat* last season. It was an American novelty—hundreds tried it—and though many were disposed

to expect its merits had been so Americanised that it would not hold out in this country, it proved conversely to exceed its promises, and has taken the Potato-growing public by surprise. It is impossible to repeat one-fourth of the reports in praise of it which we have received; we, however, make a few selections. Our own experience was a produce of 4 cwt. of marketable Potatoes (and not a peck of chata) from 7 lb. planted—the separated eyes, of course. One seedman in the provinces writes, "My customers speak in high favour of it: one to-day has just raised his crop from one tuber, 16 lb. good weight, very handsome; he left one, a very fine clear handsome specimen, 12 oz. in weight, a great beauty." Our correspondent, N. J. Easterbrooke, Esq., of Hayle, also says: "You cannot speak too highly of the Early Rose Potato—it is indeed a wonder; as an early Potato, they are undoubtedly the best I ever saw. All who wish for great and good things ought to plant the Early Rose." From various letters in the horticultural papers, single pounds produced 48, 105, 123 pounds, &c. With regard to qualities, "A Subscriber, Nottingham," in 'Journal of Horticulture,' says, "I cooked some more yesterday (Aug. 17), and found them splendid; I never tasted anything to equal them." All these testimonials were quite spontaneous and unsolicited, and should, we think, invite a very great demand for this and the other American varieties. We may further say that, from various facts and experiences with this Potato, we believe it will be quite possible to raise two crops in one season by beginning early.

Another from the same quarter and by the same raiser is

BRESE'S KING OF THE EARLIES.



It is thus described:—"Vines a medium height or a little less, and bearing no balls; leaves large; tubers large and handsome, roundish and slightly flattened;

eyes small and somewhat pinkish; skin flesh-coloured or dull pinkish white; flesh white; cooks well, and is of the best quality for the table. It has proven thus far very hardy, and is said by Mr Brees to be *fully a week earlier than his famous Early Rose*. A very limited quantity of this most recommendable kind was sold in New York last season; it having been held back for a better stock until this season, but so great was the desire to possess it, that what was sold fetched 80 dollars (10 guineas) per single tuber! Incredible as this may seem, it is a well-authenticated fact, and will, we believe, quite reconcile our English friends to paying the otherwise great but now comparatively modest sum of 6s. per pound, 7 lb. for 40s. We believe we are the only holders of this Potato in Great Britain."

This certainly does appear a "great" sum for a pound of Potatoes, but in the days when new Pans are being retailed at 7s. 6d. per half-pint, it must be accepted as a "comparatively modest sum." The purchase of these new Potatoes in the first instance, and the cost, added to the risk of importing them, in the second, no doubt fully justifies such a high price.

BREES'S PROLIFIC.



"This variety originated with Albert Brees, Esq., in 1861. Mr Brees was the originator of the Early Rose, the seed producing both that and Brees's Prolific being from the same seed-ball, and both are seedlings of the Garnet Chili.

"The Vines of Brees's Prolific are of medium height, quite bushy, and somewhat spreading, and with very large leaves; as yet they have produced no seed-balls. Tubers large, regular in shape, and very smooth, slightly oblong, and very much flattened; skin dull white, inclined to be russeted; eyes but little depressed and slightly pinkish; flesh white, rarely if ever hollow; cooks quickly,

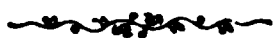
is very mealy, and of excellent quality. Yield very large, maturing three weeks later than the Early Rose. This variety appears to excel in prolificacy, and should be well tried in this country."

In addition, Messrs Hooper & Co. offer "Climax, a seedling of the Early Goodrich; it has a stout erect stalk, of full medium height, internodes of medium length, and very large leaves; the tuber is above medium in size, quite smooth, in form of a short cylinder swelled out at the centre, occasionally slightly flattened, and terminating rather abruptly; eyes shallow, sharp, sometimes swelled out or projecting, and always strongly defined; skin medium thickness, considerably netted or russet, tough, white; flesh entirely white, solid, heavy, brittle, and never hollow, and it boils through quickly, with no hard core at centre or stem, is mealy, of floury whiteness, and of superior table quality. In productiveness it is fully equal, if not superior, to either the Early Rose or the Early Goodrich; bears few small tubers, and matures nearly with the Early Rose. During the heated term of July and August last, the foliage of the Early Goodrich, which was planted by the side of the Climax, burned badly, while the leaves of this seedling were unaffected. It is a good keeper and gives great promise. Also

THE 'QUEEN'S' POTATO,

a selection from Paterson's Victoria, which can be greatly recommended. It possesses, in an increased degree, all the qualities that have made that Potato so famous. A splendid cropper, producing tubers of the most handsome and uniform appearance, and of the finest qualities for table. This Potato is less liable to disease than many others, and, we are informed, is the principal variety grown at Balmoral by her Majesty's special command. In growing this kind, which produces bloom and fruit plentifully, we should recommend the flowers being cut off, as we believe it will be found to increase its already wonderfully productive powers."

To give an instance of how the varieties of Potatoes appear to multiply, a correspondent has just written us a letter, in which he states: I have been busy getting in Potato samples, and have a few more to plant to finish them. *Just one hundred and six under different names.* By-and-by we hope to lay before our readers the results of the trial made by this correspondent.



HORTICULTURAL EXHIBITIONS.

THE ordinary meeting of the Royal Horticultural Society of the 2d of March can only be briefly noticed, though there were many points of interest. One of the prime features was the Camellias in pots, the best six being shown by Mr C. Turner, who had nice pyramidal grown plants from 4 to 5 feet in height, well flowered, and the foliage as healthy and clean as could well be wished. The sorts were Mexicana nova, Madame Lebois, and De Notaris, shades of red; Sacco novum and La Costituzione, salmon rose; and Il cygno, white. There was another group from Mr Wilkie, Kensington, but not nearly so fine. There were prizes for the best blooms of Camellias, but they were not so good as might have been expected. Forced or unforced shrubs in flower, which one would have thought could have been made an interesting feature, were quite poor, only one group of very ordinary plants being produced. Mr Howard of Balham, well known as an admirable cultivator of the Lily of the Valley in pots, had some capital plants that were well done. Groups of Orchids were exhibited by Messrs Veitch & Sons, B. S. W.

liams, Lord Londesborough, and others; and they made a charming display. The demand on our space forbids any mention of these in detail.

Prizes were also offered for new and also for late-kept Grapes, but the former were not represented. In the way of late Grapes, Mr Bannerman, gardener to Lord Bagot, Blithfield, Rugeley, sent some excellent bunches of Lady Downes that were of fine flavour. Mr Johnstone, Glamis Castle Gardens, had some Muscat of Alexandria, which, though somewhat shrunken, were very finely flavoured, and some thought the preference should have been given to these over Lady Downes. The Muscats were ripe in the beginning of August, and were cut from the Vine on the 2d of November last. Mr Meredith had some Black Alicante and Lady Downes cut from a north-house much shaded by Elm-trees, but they were of very good quality. In addition to other vegetables, such as forced Asparagus, Seakale, &c., there were some specimens of variegated Brussels Sprouts sent by Mr G. Beech, the Gardens, Castle Ashby, Northampton: the variegation was not very distinct, while the probability of the plant being of any use for decorative purposes seemed very small indeed.

On March 16th, the annual show of Hyacinths and other spring flowers, in connection with the Royal Horticultural Society, was held at South Kensington. It was not so extensive as last year's, owing to Mr William Paul not appearing as an exhibitor, though had he done so, there is reason to believe he would have carried off some of the leading honours. Mr Paul, instead of exhibiting, concentrated his strength on his spring show in the northern arcade, and made a most excellent display, groups of flowering and foliaged plants being nicely alternated. The Hyacinths were not so fine as last year—there was lacking that massiveness of spike and superb finish that characterised last year's growth in so remarkable a manner; but so fine a development appears to happen only at intervals of a few years. With eighteen Hyacinths distinct, as well as with eighteen blue Hyacinths distinct, Messrs W. Cutbush & Son were first in each instance, having in the former case General Havelock, Baron Van Tuyll, Nimrod, De Candolle, Charles Dickens, Lord Palmerston, and Grand Lilas, shades of blue; Von Schiller, Macaulay, Mrs Beecher Stowe, Florence Nightingale, Charles Dickens, a very handsome pale-pink variety, and Princess Charlotte, shades of red; Emmeline, Grandeur à Merveille, Snowball, and Mirandoline, white; and Haydn, mauve. There was no competition in this class. The eighteen blue kinds comprised General Havelock, Lord Melville, Baron Van Tuyll, Mimosa, Prince Albert, Hamilton, Raphael, Nimrod, Pieneman, very large bells and spike; Charles Dickens, Grand Lilas, Van Speyk, Lord Palmerston, Blue Mourant, Garrick, Marie, Argus, and De Candolle. Mr C. Turner was second, the best spikes being Marie, Charles Dickens, General Havelock, De Candolle, and Czar Peter, a large-belled pale-blue variety.

The most interesting class was that for 36 Hyacinths in 12 varieties, 3 of each, the sum of fifteen guineas being offered in 4 prizes by some of the Haarlem bulb-growers. Messrs W. Cutbush & Son were the only exhibitors here, having Argus, very fine; Baron Van Tuyll, Charles Dickens, and Grand Lilas, blue; Von Schiller, Macaulay, and Florence Nightingale, very pretty indeed, and Duc de Malakoff, red; Haydn, mauve; Mont Blanc, Queen of the Netherlands, and Gigantea, white. Mr T. A. Steel had the best six Hyacinths in the Amateur Class. They were, Baron van Tuyll, Charles Dickens, Von Schiller, Gigantea, Grand Lilas, and Alba Superbissima. The second and third collections were very nearly equal. Messrs W. Cutbush & Son offered a prize of three guineas for the best 12 Hyacinths, distinct, grown by amateurs or gentlemen's gardeners. This was won by Mr Weir, gardener to Mrs Hodgson, Hampstead, who had Charles

Dickens, Marie, Grand Lilas, and General Havelock, blue ; Haydn, mauve ; Vo Schiller, Macaulay, Florence Nightingale, Duc de Malakoff, and Emmeline red ; Ida, yellow ; and Mont Blanc, white. By the same firm the sum of two guineas was offered on the same conditions for 12 pots of Tulips, distinct ; and Mr T. A. Steel was first with a capital set, comprising Van der Neer, Keizer Kroon, Tournesol, White Pottebakker, Duc d'Arenberg, Proserpine, Bruid van Haarlem, Cottage Maid, Jaght van Rotterdam, Vermillion Brilliant, Chryslora and Couleur Cardinal, all single ; and Tournesol, double. Mr Weir had some good flowers also, especially Queen of Violets, Proserpine, Joost van Vondel, Couleur Cardinal, and Chryslora. Collections of Narcissi and Crocuses, both of indifferent character, were staged also.

Splendid groups of Orchids were furnished by Messrs Veitch & Sons, Lord Lonsborough, and B. S. Williams, comprising some very fine examples of many of the rarer kinds. Attractive as the Hyacinths were, yet the visitors lingered about the Orchids, and no one wondered they did so. Among them was a splendid example of *Phalænopsis Schilleriana*, and some beautiful forms of the chaste *Odontoglossum Alexandræ*. Particularly noticeable was a fine group of Palms, &c., for table decoration, contributed by Mr J. W. Wimsett of Chelsea. The tallest of the Palms were on nice stems, and underneath their elegant drooping fronds were placed flowering-plants of *Hoteia japonica*, with here and there a dark-foliage *Dracæna* by way of contrast, the group edged with the drooping grass-like *Isolep-tenella*. A charming group of spring-flowering plants was contributed by Mr T. S. Ware, Half Farm Nurseries, Tottenham, containing pans of *Scilla bifolia*, *S. bifolia alba*, *S. Siberica*, *Saxifraga oppositifolia major*, a very pretty dwarf free blooming species ; *Hepaticas*, &c. Two large groups of Tulips in pots were also furnished by Messrs Barnaart & Eldering of Haarlem, Holland, that had travelled the distance remarkably well, and made a very effective display.

In the way of fruit there were some excellent dessert and kitchen Apples—the latter being especially fine and well preserved ; and Mr W. Thomson, Dalkeith sent bunches of his new white Grape Lady Downes, taken from a Vine on its own roots, also from one grafted on the black Lady Downes. In the last-named case the berries were rather smaller, but were considered to have the best flavour.

In addition to Mr William Paul's spring display at the Royal Horticultural Gardens—a most attractive show in itself—Messrs W. Cutbush & Son make a similar display at the Crystal Palace, and all the resources of this firm are brought into requisition to enrich their exhibition. Each of these remains open to public view for some ten or twelve days, and must do much in the way of making flowers of this character extremely popular. It may be also stated in this connection that the show of the Royal Horticultural Society on the 16th inst. made the fifteenth time that Messrs W. Cutbush & Son had exhibited Hyacinths, and the thirteenth time they had been awarded the premier prize for Hyacinths.



BOOKS, &c., Received.

THE FOOD JOURNAL for March. THE GARDENER'S MAGAZINE for March.

REPORT ON THE PLANTING AND LAYING OUT OF THE THAMES EMBANKMENT By Alexander M'Kenzie. Presented to the Parks, &c. Committee of the Metropolitan Board of Works.

HORTICULTURAL CALENDAR AND GARDENERS' DIARY for 1870. Letts, So-

& Co., Printers, New-Cross, London. This appears quite a new design, and consists of a series of sheets in the form of slips attached to a stiff card, and is issued for the purpose of hanging in the greenhouse or toolhouse, and noting temperature, direction of wind, date of planting or sowing, &c., a space being left after each day of the month for the purpose; and there is also a column of brief reminders of monthly duties connected with every department of the garden. The backs of the slips can be utilised for advertisements by the firm who may order a quantity of them. For registering a list of shows, and suchlike, it is extremely useful.



NOTES AND QUERIES.

[We regret that an unusual press of matter compels us to postpone many valuable communications.—Eds.]

ROYAL HORTICULTURAL SOCIETY.—His Grace the Duke of Buccleuch, K.G., President of the Royal Horticultural Society, has nominated the following gentlemen for Vice-Presidents of the Society for the present year—viz., H.S.H. the Prince of Teck; the Lord Bishop of Winchester; Lieut.-General Hon. C. Grey, F.R.S.; W. Wilson Saunders, F.R.S.

We are informed that the Council of the Royal Horticultural Society have awarded a silver flora medal to Miss Eleanor A. Ormerod, Sedbury Park, Cheltenham, in recognition of the assistance she has given to the Society's collection of economic entomology.

ABANDONMENT OF CHISWICK.—The writer of the lines under this heading is informed that they are not admissible to our columns.

VARIEGATED WELLINGTONIAS (Mrs Browning).—We have seen two different types of variegation; the one being variegated with gold, the other with silver. The former was sent out by Mr R. Hartland of Cork, who has in his nursery a large plant, though somewhat cut to pieces by the propagator's knife. The other has a silvery or creamy variegation, and, to the best of our knowledge, was obtained in Somersetshire. We have seen it, and it has the appearance of being a capital companion to the golden variety, apparently quite as robust in growth, and if anything of a livelier appearance. The silvery variegated variety is to be distributed in the autumn by Mr Thomas Sampson, Preston Road Nurseries, Yeovil.

MUSHROOM CULTURE (Job Surman, Sutton-in-Ashfield).—‘How to Grow Mushrooms,’ by William Earley, price one shilling; or a very useful pamphlet just issued by Messrs Sutton & Sons, Reading, will, we think, give you all the information you want. You cannot do better than get both.

LUCY GRIEVE PELARGONIUM (Edward Coveny).—Our correspondent writes: “The above-named well-known Tricolor Pelargonium has been in my possession ever since it first came out, but it does not do well with me. Perhaps I may use an unsuitable soil, it seems so shy of making wood. Will you, or any of your correspondents, give me their mode of treatment of the above-named plant? I am afraid it will never make a bedder, as it grows so indifferently, at least in this part of the country.” Our correspondent, however, does not name the locality in which he resides. We forwarded his letter to Mr W. R. Morris, the well-

known raiser and cultivator of variegated Zonal Tricolor Pelargoniums, and he writes as follows in reply thereto: "Lucy Grieve is one of the strongest and rankest growers we have among the Tricolors. A strong cutting, rooted any time between March and July, should in the following May be a plant 2 feet in height, with foliage-leaves 3 to 4 inches across. It should be planted from the cutting-pot at once into an 8-inch pot, well drained, and filled with rough pieces of light sandy turf, giving full allowance of light, air, and moisture; the same treatment suits the whole tribe. Stimulating with manure I find wholly unnecessary. To grow a healthy plant well is easy, but to cure a sick plant is another matter, and is seldom worth the trouble. For the information of your correspondent, I give the following as my practice, and I never fail:—*Wait till there is an appearance of growth*, and consequent root-action, remove the plant from its pit, and place it in a pail of water. Keeping the roots under water, manipulate them till wholly free from soil; rinse the whole plant in clear water, and dip the roots while wet in dry silver-sand. The roots will, on being shaken well, disentangle themselves, and each fibre will have a coating of sand adhering to it. Re-pot in as small a pot as possible, using light sandy loam; sprinkle the foliage, but do not water till after a few days, and with a very gentle bottom heat the plant will, in a very short space of time, fill the pot with new roots: then re-pot. If your correspondent will disbulb a young growing plant, keeping it to one leading shoot till well established, he will soon alter his opinion as to the 'shy growing' of Lucy Grieve."

AN ABERDONIAN.—Your greenhouse that you have converted into a vinery being circular, it will be expensive to heat it with hot-water pipes, and we don't think an Arnott's stove, as you propose, will answer your purpose. In your circumstances, we recommend a well-built brick flue on arches, so that the roots of the vines may pass freely under it.

L. A., A CONSTANT READER.—Your Marechal Niel Rose seems to be growing too strong to bloom well. Remove some of the rich soil, and replace it by poorer, in which there is mixed some old lime-rubbish, and we think it will bloom with you. Do not prune it too close.

W. A., CHESTER.—You may burn the soil of your garden by getting any brush-wood you can conveniently, and putting it together like a cone, with a vent at the top; then set fire to it, and pile your soil all round it. In this way you may burn a good deal of it, and especially the stiffest of the clay. With regard to your right to exhibit as an amateur, while at the same time you sell a portion of the plants and fruit you grow, we think you stand in the same position in that respect as gardeners do whose employers sell a portion of the produce of their gardens. They are not thereby disqualified from exhibiting as gardeners, and classed with market-gardeners or nurserymen; neither should you be, if you do not advertise or issue printed circulars.

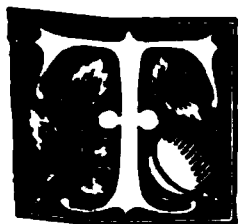
PROPAGATING CLEMATIS BICOLOR (AMATEUR).—This is easily propagated by grafting one-year-old wood on to the roots of Clematis flammula (the sweet-scented kind). The plants should be potted as soon as grafted, and the pots plunged in a gentle bottom-heat, in a glass case, in a stove or propagating-house. Clematises can be sometimes struck from cuttings, taking the young wood with a heel to it, and striking the cuttings in the mode adopted in propagating the Verbena from cuttings. They can also be grown from layers in pots, but it generally takes a year to root them. We suppose our correspondent has Clematis florida bicolor. Has he the glorious C. Jackmannii? If not, he should obtain it.

T H E G A R D E N E R.

M A Y 1870.



PLANTS AS SANITARY AGENTS.



HIS important point has just been put prominently forward in a thoughtful paper read by Mr William Ingram, gardener to the Duke of Rutland, Belvoir Castle, before the Leicester Museum, in which, with much felicity of illustration, he made manifest the action of certain laws affecting the decay of animal life, the consequent existence of impurities, and the necessity for their removal; and the further necessity for the corrective activity of vegetation as an important part assigned to plants in the great system of nature as sanitary agents. In the course of this address Mr Ingram pointed out the "great array of polluting forces" operating on the earth, and touched chiefly on animal life as a great polluting power. This it accomplishes in the continued residence of man and beast on the earth, in that matters corrupt and offensive are deposited, which, having "once formed part and parcel of the animal economy, cannot be applied again without infecting with their inherent corruption any living animal that may again absorb them; and also from the fact, that on the heels of decaying and dead animal life "treads decomposition; the dead matter that has once lived is distributed anew, and the fragments pollute the air, the water, or the earth." But in the operation of that wise economy that clothes all nature as with a garment of beneficent compensating services, vegetation interposes, and

"Earth, that nourished thee, shall claim
Thy growth, to be resolved to earth again;
And, lost each human trace, surrendering up
Thine individual being, shalt thou go
To mix for ever with the elements,

To be a brother to the insensible rock
 And to the sluggish clod, which the rude swain
 Turns with his share, and treads upon. The oak
 Shall send his roots abroad, and pierce thy mould."

In life, the animal subdues the plant; when the former perishes, the plant reasserts its power; and so there is afforded the example of "two great dependent forces, mutually destructive, yet mutually regenerative; the one fixed to the soil would exhaust its resources of fertility, but the destruction of animal life restores its exhausted powers, and vegetable action goes on with renewed vigour."

Thus plants may be said to fulfil a true and great vocation; and this high service has two aspects, the one as regards dead nature, the other as regards living things. In its relations to dead nature, the plant serves, while living, to purify the air we breathe. It continually absorbs carbonic acid and gives off oxygen gas, and thus is a chief instrument in maintaining the natural condition of the atmosphere. It renders the air more fit for the support of animal life, both by removing that which is noxious, and by pouring into it that which is salutary to animal health and life. And when it dies, it either covers the earth with a vegetable mould, which favours the growth of new generations of plants, or it accumulates into beds of peat or mineral coal, by which man is long after to be warmed and the arts of life promoted. In either case, it only lingers for a while in these less sightly mineral forms. It gradually assumes again the gaseous state, and whether it is allowed naturally to decay, or is burned in the fire, ultimately arises again into the air in the form of carbonic acid. By this means, in part, vegetation is perpetuated upon the globe, and the natural composition of the atmosphere, as regards the proportion of the carbonic-acid gas, is permanently maintained. As regards living animals, we all know and feel that plants are necessary to our daily life. Utterly dry up and banish vegetation from a region, and nearly every sensible form of animal life forthwith disappears.

There are also subsidiary purposes the plant serves, and one of these is that of covering and adorning dead nature. But this purpose is only secondary, and, as it were, ornamental, and yet has issues closely allied to sanitary purposes. One of these subsidiary purposes Mr Ingram has alluded to in a suggestive passage of his address relating to planting trees in our graveyards and cemeteries. Both the sanitary reformer and the teacher of æsthetics are asking that our graveyards be planted with trees; the one for the sake of the great purpose plants labour to fulfil as sanitary agents, the other as a means of ornamentation merely.

“ Now they are scarcely known,
And rarely in our borders may you meet
The tall larch sighing in the burying-place,
Or willow trailing low its boughs to hide
The gleaming marble. Naked rows of graves
And melancholy ranks of monuments
Are seen instead.”

On this point Mr Ingram remarks as follows :—“ There is something more than sentiment in the custom, observed from remote ages, of planting trees in our graveyards and cemeteries. Trees are quickeners of decay—are the scavengers provided by nature for absorbing that which is corrupt in the ground, and quickening it into the life that gladdens our eyes in summer-time in green leaves and bright flowers : who would not rather that this ‘ mortal coil,’ bereft of the life that gave it power, should reappear in verdure of the stately tree, the Cedar, the Pine, or the Oak ? How much better than to contaminate the earth, or to poison the water-spring ? The ancient Egyptians sought to perpetuate the names and famous deeds of their great men by embalming their bodies, and placing them in almost impenetrable tombs. What have they gained but that destruction which nature has ordained, and which, though protracted, is nevertheless inevitable ? Who knows or cares for the voiceless mummy ? The men of ancient Rome destroyed their mighty dead by fire, and reverently placed their ashes in urns and tombs of sculptured marble, putting with the relics of their friends a small tear-bottle or lachrymatory. If we continue to follow the custom of our forefathers, and return dust to dust, let us not omit to plant a tributary tree. Why should not our disused churchyards be planted ? I am sure many persons would esteem it a privilege to be permitted to plant a tree on the grave of a dear friend. If this were done, our churchyards in time would be one shady grove, and would be so purified as no longer to be sources of disease to the living congregated around them.”

What is here indicated is only a small part of the functions discharged by plants as sanitary agents. We have simply endeavoured to indicate Mr Ingram’s line of argument, and to a small extent his conclusions. A large range of study is opened up to the intelligent observer, involving the whole area of vegetable physiology. In yielding food for the animal kingdom the plant is scarcely less a sanitary agent. One of the main objects of the plant is to feed the animal. This it does with various forms of vegetable matter in different climes and countries ; and it provides for each herbivorous and carnivorous race those peculiar forms on which it best loves, because best fitted, to feed.

NOTES OF THE MONTH.

At the nurseries of Messrs Downie, Laird, and Laing, Stanstead Park, Forest Hill, can be seen some remarkable illustrations of the influence of the graft on the stock in certain cases of grafted plants. Mr Laing has been experimenting on some Abutilons, and in the first instance grafted the green *A. megapotanicum* on the variegated *A. Thompsoni*; the scion came handsomely variegated, and presents even a handsomer and more attractive variegated form than the well-known *A. Thompsoni*. The next experiment was made with *A. Thompsoni* grafted on the green *A. megapotanicum*, and in this case the graft was allowed to make sufficient growth to get the blood infused, and then pinched back; this induced growth from the green stock, and in a strange to state, all the shoots made down to the very surface of the soil came variegated. A further experiment was made with the strong-growing green *A. Duc de Malakoff*, budded on *A. Thompsoni* in the manner in which a bud of a Rose is inserted in the Briar stock; a green leaf was left on the bud, which grew, and kept green, but all other growth came variegated, and so gave a variegated form of *Duc de Malakoff*, to all appearance as robust in growth as the green *Duc de Malakoff*. In making these experiments, Mr Laing made use of matured and young wood as grafts, and his experience has taught him that hard wood with dormant buds is preferable to young points of growth: the former is certain to come variegated; in the case of the latter, the young points inserted as scions go on to make green leaves, and it is only when the points are removed that the fresh shoots forced into growth thereby come variegated. Mr Laing also recommends budding in preference to grafting, and that the stock and bud should both be of a similarly matured character. In a course of lectures "On Plant Life as contrasted with that of Animals," delivered before the Royal Institution by Dr Masters, Editor of the 'Gardeners' Chronicle,' considerable reference was made to the variations secured by budding and grafting, and these Abutilons were brought forward as illustrations in point. In describing the influence exerted by the stock or the scion, Dr Masters stated that it is a general belief amongst gardeners that in most cases but little actual change is produced by grafting either in the stock or in the scion; but the exceptions to this rule are so numerous, and even from a gardening point of view so important that it seems better to consider that we have not succeeded in tracing the effects in all cases than to deny the existence of such modifications. In illustration of these points the lecturer alluded to the effect of the stock in producing hardness of constitution in the scion, and instance a case where grafts of *Cupressus macrocarpa* on the Red Cedar as

stock had survived the winter, while seedlings from the same species, grown on the same spot, had perished. It certainly does seem remarkable that in the case of the experiments with Abutilons made by Messrs Downie, Laird, & Laing, variegation, which has been proclaimed by botanists to be a disease in vegetation, should be found overpowering the green form of growth, and changing its character, and this whether used as a scion or stock in the process of grafting. It was stated by Dr Masters that it has been found by M. Van Houtte, in the case of the Abutilons just referred to, that if the variegated scion be removed the variegation gradually disappears from the stock, and green leaves only are subsequently produced.

The subscription to the Veitch memorial is said to have reached the sum of £900, but the manner in which this sum is to be expended has not yet been announced: probably the Executive Committee have not yet matured their plans. There has been a kind of eruption of horticultural testimonials during the past few months, of varying degrees of consequence; and it is not impossible that a few years hence, so rapid has been the growth in this direction of late, that a testimonial epidemic will set in, and great and small, known and unknown, will have a chance of reaping a reward of this character, whether deserved or undeserved. The Veitch memorial was a strongly exceptional case, and we are glad to know so much money has been realised; but when nearly half-a-dozen others spring up around it, it must be admitted they are somewhat unwelcome corollaries.

The recent death of Mr Richard Stains was the means of removing from our midst another of those floricultural worthies that so largely helped to make the past of floriculture famous; while to some of them, and notably to Mr Stains, it was given that they should be valuable helpers in aiding its present development. For many years he was a cultivator and exhibitor of florists' flowers; but during the latter years of his life, owing to the claims of business, &c., he had almost entirely, if not quite, abandoned their culture. He was a firm friend and constant supporter of the once National Floricultural Society, he was an active member of the Committee of Management on its formation in 1851, and was the treasurer of the Society in 1859, on the occasion of its dissolution. For many years also he was one of the judges at the exhibitions of the Royal Botanic Society in the Regent's Park, and at the time of his being stricken down with paralysis in 1865 a member of the Floral Committee of the Royal Horticultural Society. His genial character and open-handed hospitality were known to all who came in contact with him; and it was painful indeed to many of his old friends and associates to know that, though living, he was both mentally and physically incapacitated from acting with them, or taking

any cognisance of those pursuits that formerly afforded him so much pleasure. Mr Stains died in the King's Road, Chelsea, in the early days of the month of April.

The Central Horticultural Society, of which the late Mr Samuel Broome was an active member, is taking steps towards the erection, in Nunhead Cemetery, of a memorial over his grave, in remembrance of the high esteem in which he was held, and by way of perpetuating his memory.

Our readers, says the 'Canada Farmer,' have heard of the atrocity of girdling some 1500 fruit trees near St Joseph, Michigan, last spring, and how the neighbourhood turned out in a body and bandaged them up so as to save them. Every one of these trees is living and the owner has realised an immense crop of fruit from them the past season. This fact is considered quite marvellous by the residents round about. Those wise in such matters explain it by saying that the interception of sap by girdling has caused the production of fruit instead of wood this season, and that the real trial for the life of the trees will come next year. It used to be thought that there was no help for a girdled tree; but the theory is now exploded. In the above case the damage was remedied by bandaging the trees with strips of cloth dipped in wax. If the girdling was very broad, we apprehend that a portion of these trees have borne fruit for the last time. What is thought a better way of saving girdled trees, has been very successfully practised for some twenty years at Nashua, New Hampshire. The method is to graft five or six scions as large round as a goose-quill, and long enough to reach over the girdled place in the tree. The live bark is first notched above and below the girdle, the sprouts sprung into place, and the ends fastened with wax. The scions grow rapidly, and in time spread over the whole girdled surface. Apple-trees completely girdled, and having the bark taken off over a foot in width on one side, have been saved in the above manner by Mr Town.

The Council of the Royal Horticultural Society have succeeded in making what appears to be a very favourable arrangement for securing a portion of the Chiswick Gardens. We learn from the 'Gardener's Chronicle' that the present arrangements are these:—The arboretum is to go; the Wilderness is to be a wilderness no longer; the orchard is to be abandoned; of the 30 acres 10 only are to be retained as an experimental garden; the council-room, large conservatory, and fruit room, and all the other houses, will be retained. Though the orchard is to be abandoned, young trees have been secured on dwarf stocks, so that space will thus be gained without much loss. A lease of the 10 acres will be granted for fifty years, at a rental of about

£100 a-year, through the liberality of the Duke of Devonshire, who has not proved the stern landlord the Council made him out to be. It is estimated that by these new arrangements the Society will be able to reduce its expenditure by £1000 a-year. That Chiswick is not to be wholly abandoned will be a cause for congratulation among horticulturists; and it is to be hoped that examples of practical horticulture will not be altogether discarded.

Considerable interest was manifested at the meeting of the Royal Horticultural Society on the 6th ult., about some forced Asters in pots, exhibited by Messrs Standish and Co., Royal Nurseries, Ascot. They were of the dwarf bouquet strain, and were nice, compactly-grown plants, of a branching habit. The seed was sown about the end of August, but by sowing two months earlier Messrs Standish & Co. hope to have forced Asters at Christmas. The Standard Roses in pots, brought to the same meeting, were a somewhat novel and interesting feature. Messrs H. Lane & Son had a group of about twenty plants, all with nice heads of bloom averaging from five to ten flowers; and Messrs Standish & Co. had a standard specimen of H. P. Duke of Edinburgh, in a pot bearing between thirty and forty flowers. Messrs Veitch & Sons made their *debut* at this exhibition as Rose exhibitors, staging a charming group of quarter specimen pyramidal trained Roses that were much admired and highly commended.



THE CULTIVATION OF HARDY FRUITS.

(Continued from page 171.)

THE APRICOT.

THE cultivation of this much-prized fruit does not receive the general attention that its value demands. This may in most cases be accounted for by the amount of trouble that is necessary, not only at the time of blossoming, to protect the blooms from frost, and at the ripening season to protect the fruit from the ravages of birds, &c., but also from the fact, that in late, low, and damp localities the fruit seldom attains maturity, or, if it does, it is often small and of inferior flavour. This, in my opinion, ought not to be a barrier to its more general cultivation, but should incite us to endeavour to assist nature by some simple artificial means, whereby the difficulties may in a measure be overcome. That the Apricot will not stand any great amount of forcing, more especially during the early part of its growth, is well known; yet it has been found that artificial means, judiciously applied, have in

many cases proved "father to a crop" where failure before "had held supreme sway." I hope to be able to show that outdoor cultivation in even bad localities is not incompatible with a good and well-ripened crop of Apricots.

Apricots have been classified by various writers, but to Mr Thompson must again be awarded the palm for having given us in his 'Gardeners' Assistant,' at once the best, most complete, and easiest understood of all which have come within the range of my observation. He has divided them into two classes—the first, those with kernels bitter; the second, those with kernels sweet.

Class I.—Division 1. Fruit small, round, early; flower small. Division 2. Fruit large. This division is further subdivided into—
1. Channel of the stone closed up, flesh parting from the stone. 2. Channel of the stone closed up, flesh adhering to the stone. 3. Channel of the stone pervious.

Class II.—Division 1. Flesh parting from the stone. Division 2. Flesh adhering to the stone.

I would first treat of the propagation of the Apricot, which may be done in one of three different ways—viz., by seed, budding, and grafting. Mr Thompson, in the 'Gardeners' Assistant,' states: "There are some sorts which reproduce themselves with considerable exactitude from the stone, and are accordingly propagated in that way. The Moor Park is one of these, . . . and it and several others are frequently raised from seed by the French." We have no experience of this ourselves, but from the above work, and books on French fruit growing, it would appear to be a favourite practice, followed with considerable success, on the Continent. It is to be noticed, however, that none of these authors are prepared to state that trees so produced are in all respects the same as the parents; so that, if particular varieties are wanted, the best and surest plan is to have recourse to budding, which is preferable to grafting. If new varieties are wanted, the seed is the only way to obtain them. As formerly directed, care must be exercised in protecting the blooms when the pollen is ripe, so that there may be no chance of impregnation taking place save with the varieties intended by the cultivator. For particulars regarding this, I refer the reader to the articles upon "The Pear" in the volume for last year, where he will find the matter fully discussed. Seed should in all cases be saved from young, healthy trees, the stones being selected from the finest and ripest of the fruit. They may be sown in a well-prepared border, moderately rich, with old Mushroom-dung, or, which is perhaps better, rotten leaf-mould. If the latter is used, one-third of the whole may be composed of it. The bottom of a wall having a south or east exposure will answer the purpose very well. The stone

may be placed in lines 1 foot apart, and 2 or 3 inches between each : $1\frac{1}{2}$ or 2 inches is a good depth to place them, and if severe or protracted frost should set in during winter, they must be protected in some way. If all goes on well, the following autumn the seedlings will be ready for transplanting into more permanent quarters. This operation may take place in the month of September, and it has been recommended that the taproot should be shortened back, for the obvious reason of causing the roots to spread out nearer the surface, thus preventing a coarse habit of growth, and the penetration of the roots down into the bad subsoil. Two feet between the rows, and one foot from plant to plant, will be good distances. As the young trees grow they will require to be regularly shifted, giving them more room at each removal if they are intended to be proved upon their own roots. As this would incur considerable labour, as well as several years' delay, by far the better plan is to take one or two of the best buds off each seedling, and have them budded upon a good, old, healthy tree ; and the probability is, that the seedlings may all be proved before they are three years of age. Those not considered worthy may then be tossed away, those worthy of further trial may be retained and carefully looked after. When this is being done, care should be taken to have every seedling numbered, and a duplicate should accompany the buds, so that no mistakes may arise.

The stocks in general use for dwarf-trained Apricots are the Mussel and common Plum, and for those intended for tall standards, or riders, the St Julien is said to be the best, on account of the fine straight stem it produces. In France, the latter stock, as well as Damas Noir and Cerisette, are in very general use. The stocks for this purpose should in all cases be raised from seed, as experience has proved that where suckers had been used the tree was never so healthy as from seed. Trees from suckers are far more liable to exude gum, and are not so long-lived as seedlings. The time for budding the Apricot depends entirely upon circumstances and situation. In the south of England it may be done as early as the middle of June, while in the more remote districts of Scotland it may be the middle of August before all things are in proper condition for the operation. The best rule to be laid down is, that the operation will be performed with the best chance of success when the wood is approaching maturity, the bud and wood parting freely the one from the other. As the wood and flower-buds resemble each other somewhat at this period, they should be selected with care, for the labour will be in vain should flower-buds be inserted. Wood-buds are always long and tapering, while flower-buds are more plump and of a roundish form. Various modes of budding may be employed with success, but the simplest,

and perhaps the best, is the shield-budding, which has already been explained in these papers. It is of the greatest importance to look regularly over the buds once a fortnight or so, to see that none of the ligatures are too tight; and if so, have them loosened. There is nothing more likely to sow the seeds of disease in the young tree than to allow the ligatures to remain upon the buds until the stock has become marked or cut thereby.

Grafting is a mode of propagating the Apricot that is seldom had recourse to under ordinary circumstances. Where necessity may compel its adoption, the best and surest mode is whip-grafting. In the case of old trees this will be considered almost an impossibility when it is known that success cannot be depended upon unless recourse is had to the earthing-up process—that is to say, earth must be drawn up over the stock and graft much in the way that it is done to vegetables. The stock ought to be cut over in winter, when the trees are dormant; and the scions should also be procured about this time—at the earliest events, not later than the first week in February. The best and firmest shoots should be selected for this purpose, and if one inch of the scion is of two-year-old wood, the greater will be the chance of success. About the middle of March is a good time to perform this operation, but circumstances alone can be the guide. The Apricot, however, breaks into active growth at a much earlier period of the spring than any other fruit which I have already alluded to, and as a rule we may say that the operation should be performed two or three weeks earlier upon it than upon either the Pear or Apple. As soon as the operation is finished, the soil may be drawn up as already hinted, so as to cover over the clay that surrounds the graft. This is of much advantage to the scion, and facilitates the union. The soil, being drawn up in this fashion, serves the double purpose of excluding the air and keeping both stock and graft in a more favourable condition than if fully exposed to the drying and withering influences of sun and atmosphere. Unions are thus often formed by grafting where it would be impossible without the aid of earthing-up. Stocks that are intended to produce dwarf fan-trees ought to be worked at a height of about 10 to 12 inches from the ground, whereas those intended for riders should be worked at heights varying from 4 to 6 feet. Some cultivators have adopted a system of rebudding for the avowed purpose of obtaining dwarf trees; that is to say, they bud upon a dwarf stock, and again bud upon the last inserted bud the following year. This, no doubt, has the desired effect, but unless the walls are under the average height it will not be necessary. Where the wall is below 8 feet in height, I might recommend a trial of the system for curiosity and information's sake, as it is a well-known fact to all practical men that

it is not an easy matter to keep young vigorous trees within such bounds, without using the knife more freely than is really good for them.

JAMES M'MILLAN.

(To be continued.)



BEDDING LOBELIAS.

It will be some time hence when the bedding Lobelias will be discarded from the flower-garden. Their dwarf growth, and their ability to stand severe drought and a hot burning sun, combined with their free and continuous blooming properties, make them so useful that, were they abandoned, but little could be found so well adapted to take their place. I am so much an admirer of the Lobelia as a bedding plant, that I have made a trial of several of the leading varieties with a view of ascertaining which of them are best adapted for bedding purposes, and I now proceed to notice the several kinds subjected to such trial.

Of pure white Lobelias, I have met with but two really of this colour. I may state that I have seen two or three termed *L. speciosa alba*, but neither pure white, as the flowers have invariably come slightly edged or tinted with blue. Of the two white varieties referred to, one, named Miss Murphy, belonging to the pumila or dwarf-tufted section, I have entirely discarded, as being altogether worthless for outdoor purposes. Used as an edging in a cool conservatory, it may prove useful; but I have always failed to make it of any service in the flower-garden, except to denote its claim to be on the list of "plants to avoid." My second white—viz., Queen of Whites—is much superior, though by no means perfect as a white-flowering bedding Lobelia. It has the *L. speciosa* habit of growth, hardihood, and general good qualities, but the flowers, though plentifully enough produced, are small in size, which detracts from its effectiveness. It is, however, the best pure white bedding Lobelia we have, and I mean to use it till a better one takes its place.

Lobelias with lilac or pink flowers are now becoming somewhat plentiful, and give us new and attractive colours in this useful class of bedding plants. One of the very best is Rosy Moon, which produces rosy-pink flowers having a small white centre, as large as those of the ordinary type of *L. speciosa*, and a capital habit. Rosy Gem is similar in character, but has the addition of some purplish crimson spots on the upper part of the flower, and, though attractive, is to my mind scarcely so good a bedder as the first named. The pumila

section gives us many more varieties, and, as a general rule, the have better constitutions, and can stand exposure better, than the white Miss Murphy. Of these the best are Beauty of Ravensbourne pinkish lilac, bright and effective—a capital edging-plant; Distinction rosy red, with large white centre, very pretty and good; and Fairy having pretty pale pinkish-white flowers, spotted with lilac. For culture in pots for house decoration, this is well worthy attention.

Then there are dark and light blue Lobelias, and also some that may be termed edged flowers, of which *L. erinus Paxtoniana* is a very good type. Of the dark-blue flowers the best are *L. speciosa* var. *Drummondii*, rich deep blue, a fine and effective hue of colour, compact in growth, very free, and stands well; Trentham Blue, with large deep blue flowers, a fine and showy bedding kind; Blue Bonnet, dark blue Painter, rich deep blue, mottled with white, a thoroughly good and effective variety, novel and distinct; and Blue King, a deep shade of bright blue, dwarf in growth, very free and good. Of light-blue flowers, the best belong to some dwarf-growing compact kinds—such as Blue Tom Thumb, lively pale blue, with white centre, habit very dwarf and compact, a free and continuous bloomer; Lee's dwarf Blue, azure blue, with small white centre, habit very dwarf and dense, and thoroughly free-blooming variety; and *Pumila elegans*, deep azure blue with very small white centre, very free and good—a capital edging plant.

The best of the edged flowers I have found to be Little Gem, the flowers white, broadly edged with blue, habit dwarf and compact—excellent bedder; and Serena, white, with very slight edging of blue.

There are many others; but of these I can speak with confidence having tried them. I have not seen Tynninghame Blue, but from its published description I should take it to be a good thing.

I saw not long since what I thought a capital mode of propagating Lobelias. I was visiting a gentleman in my neighbourhood, and saw on a shelf in his greenhouse a number of Lobelias in 60-pots that had made growth which hung down round the pots, and young rootlets were starting from the base of each shoot, owing, no doubt, to the prevailing moisture. I was informed that pieces of young growth are plucked from the Lobelias in August and September, placed singly in 60-pots, and put on the shelf of the greenhouse; here they remain all the winter, and become dense masses, which throw out roots as described. In the spring the plants are pulled to pieces; and as each shoot has rootlets attaching to it, a large number of plants obtained from the division of one of them. This process certainly saves the trouble of striking cuttings; also the somewhat uncertain task of successfully wintering old plants for stock purposes.

OBSERVER.

ON THE MANAGEMENT OF BEES.

(Continued from page 105.)

WHEN the first swarm issues forth, the original mother-queen goes with it, and during the next day the combs commenced by the bees in the new hive would be sufficiently advanced to enable her to gratify her natural propensity, and she would deposit her eggs as the work advances; so that, although for the first three weeks after swarming the numbers in the hive were to decrease, yet after that period the young bees would be hatched, and under favourable conditions the increase would be so very rapid that unless room was given a swarm would probably issue; or if a super was placed in the hive, a surplus deposit of honey might reasonably be expected. This is what generally happens with the so-called improved cottage-hive. It is so small that a good swarm will fill it with comb and brood in a fortnight, and the bees must work in the glasses above. The owner is of course delighted at the prospect of getting honey from a swarm the first year, and he is quite satisfied that the cottage-hive is the right sort of thing. But after the first season there is seldom any further success, as the hive is too small to hold sufficient bees and their provender to stand the winter well; and unless they are carefully and continuously fed, they are sure to be late and weak when they should be strong and vigorous. The first swarm should be placed in a hive large enough to contain all that can effect in one season, which would be about the size of hive required to render the evil of clustering outside the hive unnecessary in the early spring.

It might now be reasonably supposed that the old stock and the young colony are each furnished with a young queen, who for a few days is occupied in cultivating the acquaintance of her subjects, and apparently receiving assurances of their loyalty. It is then her duty to fly abroad with her personal attendants, to see the world from which are drawn those nectarious supplies known as honey.

This flight is prompted by natural instincts, for it is during this flight the conditions are fulfilled which fits the queen bee to deposit the eggs from which a new progeny is formed. This flight, by association of ideas, is called the queen's wedding-trip; and if she passes safely through the dangers of her journey, she returns to her hive and is received with great rejoicing by her subjects, who welcome her as a queen in every way qualified to preside over and to promote the happiness of a loyal and industrious people.

The queen, having returned home in safety, is treated with the gravest reverence by her subjects, a group of about a dozen of whom attend constantly upon her, their heads all turned towards her as if paying

her the greatest homage ; and they continually touch her with the antennæ, as if caressing her, as she moves over the comb depositing eggs, which, unless the hive is by some means rendered queenless must become either working bees or drones. The cells in which the eggs are deposited are of two sizes, the smaller ones called worker-cells, and the larger drone-cells ; and eggs deposited in these cells become working bees or drones, as the case may be. Why is this ? The eggs of a fertile laying queen, in passing from the ovary to the vulva pass a little sac or bag called the spermatheca, containing a fluid acquired from a drone bee during the queen's flight abroad, the minute infinitesimal portion of which, coming into contact with the egg in its passage, changes the nature of it so marvellously, that that which under all other conditions of life, must have become a drone or male bee, becomes a working bee destitute of sex. And thus it occurs, when depositing eggs in the cells respectively, that in a small or worker-cell the body of the queen, by the effort made, is slightly pressed against the sides of the cell in which she deposits her egg, and sufficient pressure the spermatheca is forced into contact with the egg to cause the great change just described. If, on the other hand, the egg is deposited in a large or drone cell, there will be no pressure on the queen's body from the sides of the cell and the egg will thus escape the influence of the fluid in the spermatheca, and this deposit issues in a drone or male bee. If, however, by any chance, an egg from a fertile queen is deposited in a worker-cell, without having been brought into contact with the fluid in the spermatheca, the working bees, knowing a drone will result, will elongate that particular cell to give more room to its inhabitant ; and although it will become a drone, it will only be a very little larger than a worker-bee.

There are many ways by which the return of a young queen to the hive may be prevented. She may be tempted by the glorious prospect before her to extend her flight beyond the limits of prudence, and so fall from exhaustion ; a bird may devour her ; she may return to the wrong hive and perish there ; a cold wind may chill her, or a shower of rain beat her to the earth ; or she may perish by other means ; and it is because this so often happens that old stocks from which great swarms have issued in spring often die away in the ensuing summer and this is another reason why second swarms are often not worth keeping.

In the case of bees in the straw skep, the loss of a queen is not easily determined by actual observation, as the combs are not movable and only when it is too late to provide a remedy does the calamity become apparent. The presence or absence of a queen in a hive is always tested by the insertion of a queen-cell from another hive.

if one can be obtained ; in which case, if the queen be present, the inserted cell will be torn open at the side as before described, and the contents withdrawn ; but if the queen be lost, the inserted queen-cell will remain intact until the young queen is hatched, and she, of course, will be liable to the same series of accidents as her predecessor.

The foregoing are some of the causes of failure and consequent disappointment under the prevailing system of bee-keeping, which the bee-master should recognise and remedy by adopting the best means in his power. In the case of hives with movable combs, the absence of a queen may be discovered immediately, as there will be no eggs or larvæ in the hive, and there will almost certainly be queen-cells raised or being raised. Of course it is not in the power of man to control the seasons, but he may control the bees, and regulate their propensity to increase their numbers, so as to insure healthy stocks and a sufficiency of working bees to collect the honey it is desired should be obtained—knowing, as he should know, the time or times when honey is abundant. The loss of young queens and the death of old ones cannot be controlled ; but, as I have shown, it may be remedied, either by uniting the stocks, or inserting another queen or queen-cell, the manner of doing which is more easily described than effected in the case of straw skeps, especially as regards the introduction of queens. For the present (the month of December), if stocks of bees are sufficiently numerous to keep up the temperature inside the hives, and are in dry winter-quarters, sheltered from rain, wind, and snow, with sufficient food, that is all they require. If comparatively few in numbers, and light in weight, it would be quite safe to give a stock 2 or 3 pounds of syrup. The syrup should be made of 5 pounds of loaf-sugar, boiled in 2 quarts of water, which will produce about 7 pounds of syrup, costing about 4d. per pound. The bees should only be fed on mild nights. The syrup should be put into bottles, each of which should have tied over the mouth a piece of canvas, and inserted over a piece of perforated zinc or tin, fixed horizontally on the openings in the top of each hive. The bottles containing the syrup should be removed during the daytime, otherwise the bees might be tempted to think summer had come, and in their excitement they would fly abroad and perish. Bee-keepers had much better believe this as a theory, and not attempt to reduce it to practice, especially in the case of weak stocks.

An excellent protection to bees in a straw skep is a hayband bound round it, or a bottomless sack that will go over it loosely, and make a tidy covering when stuffed all round with hay or sawdust, and will effectually keep out the cold, besides affording access to the top of the hive when it is requisite to feed the bees.

I have only dealt with black bees in straw skeps, because they are in a majority in this neighbourhood at present, and are better known, if not better understood, than Italian, Alpine, or Ligurian bees ; but in a few years it is to be hoped a better state of things will be brought about. The Ligurian bees are hardier, fiercer, more robust, and more fertile than the English honey-bees, and they both work earlier and later in the season, and live longer ; and what is of more importance they are furnished with a longer tongue or proboscis, by which they can reach farther into the nectaries of flowers and blossoms, and can get honey from sources which the English bees cannot reach ; this would be particularly exemplified in a bad season, when the Ligurians would absorb the honey before any came within reach of ordinary English bees, and often before they left their hives in the morning, and the latter must slowly starve and dwindle away. My own opinion on the question of breed in bees is, that neither race in its purity is so good as the offspring from an Italian queen which has been fertilised by a black or English drone bee. Pure Italian bees are very beautiful creatures, and perhaps are, on that account, thought more of than they otherwise would be. But it appears to my judgment, from long experience, that the half-breeds, being a mixed race, are more to be desired for their working powers and fecundity. I recommend the introduction of the Italian element in the queen by means of a queen-cell, because, when hatched, her drones in the swarming season are certain to be pure Italians ; and if her working offspring should be pure, it would enable her owner to Ligurianise all his stock with pure queen-cells of his own raising from her brood. The purity of the offspring will, of course, depend on the source of fertilisation ; if by means of a black drone, the workers will be of a hybrid character, but the drones will be pure, as the drone-eggs are not influenced by the fluid in the spermatheca.

The manipulation of bees on movable framed hives should be made a subject of itself, but could be much better understood from actual observation ; and in that respect I can assure those who take an interest in bees and their management, that during the ensuing spring and summer I shall be most happy to show them the whole matter, with perfect safety to themselves, and, I trust, to their entire satisfaction.

The past year (1869) was a very bad one for bees, particularly during the month of June. At that period swarms were very busy filling their hives with combs, and feeding the young larvæ as they were developed ; and this, as is natural with them, to such an extent as to leave no more stores in the hives than would be required for immediate consumption. They were instinctively trusting to the

mORROW to provide for itself; and surely in the middle of June it was **not** unreasonable to suppose that they would be able to gather food at **some** times during the days; but the weather was so cold, and it **rained** so incessantly for nearly three weeks, that the poor things **could** not work at all, and were literally starved to death. In the **case** of old stocks, instances occurred where the queens did not hatch, or were lost on their wedding-journeys, and they of course dwindled away. Hundreds of stocks have perished already from the above causes, and many more will perish during the present winter if left to themselves. I have seen many stocks and swarms, but I have not seen one natural swarm of 1869 which has filled its hive with combs, or with sufficient bees to stand the winter without aid, so great was the shock received in the month referred to.



HINTS FOR AMATEURS.—MAY.

WHERE ground is extensive in proportion to the hands employed to carry on the operations, much energy and tact will be required to keep the work forward, which will (for a time) increase daily. Weeds will grow rapidly if the weather is showery and warm, and to keep them under they should be hoed as early as they appear above ground. They are then easily destroyed, and raking is not required among the crops, which does harm by closing the surface of the soil. The more frequently the hoe is used surface-stirring, the less will the crop suffer from drought. However, if the use of the watering-pot is really necessary, it should be applied thoroughly and done with, stirring up the battered ground again as soon as practicable. Timely attention to the sowing and planting of succession crops must not be neglected. Thinning will also be among the more important operations. If crops, such as Carrots and Turnips, come through the ground very thickly, it will be beneficial to pull out patches, to prevent the young seedlings drawing up weakly before a proper thinning can be given. Asparagus will soon be ready for cutting. Some prefer taking off everything as it appears through the ground, and when cutting is over the whole is allowed to grow untouched. Others always leave a number of the more weakly shoots to grow on, with the view of strengthening the roots, and cutting the strong shoots for use. The latter system we believe the safest on cold late soil, where ripening of the "grass" is late in autumn. Asparagus is in good condition when the green tops are 4 or 5 inches long. Tough blanched stalks, so often met with, and small green tops, are a poor apology for this delicious

vegetable. Dustings of salt increase vigour and help to keep beds free from weeds. More Peas might be sown for late crops; and if the ground is shallow, dry, and sandy, trenches should be dug and a quantity of rotten manure turned into them, and the Peas sown and well watered, turning the dry soil over the moistened seed to prevent evaporation. Mulching may be had recourse to, with great advantage, where necessary. If the crops are turning in too quick the straw may be well topped back, and the Peas thoroughly watered at the root, and they will start into fresh growth and bear abundantly. We fall back upon this system more or less every season with excellent results. Let the sowings be at regular intervals, according to the requirements of the family. Broad Beans, if wanted, may be sown for a late crop; mulching and watering will help them. Those which are high enough to carry a good crop. Broad Windsor a useful sort for present sowing. Beet may be sown for a main crop and the earliest plants coming through the ground will require timely thinning. If the seed has not come up well, plants can be carefully lifted and transplanted to fill up vacancies. When thinning leave the plants in the rows from 10 to 15 inches apart, according to the strength of the leaves; on poor soil they will be small, and roots rather tough when fit for use. However, rank manure gives coarseness to the produce. Silver Beet is a very useful vegetable it may be sown on any spare ground, the leaves to be used as Spinach and Seakale in winter. Carrots may be thinned 8 to 14 inches apart. The early Horn may be left thickly for drawing young plants required. Hoe, and dust with lime. If the crop is blanky, the early Horn may be sowed to keep up a supply. Parsnips require thinning well out to let in air. When very thick, the tops of the roots become diseased; 14 to 16 inches is not too much on rich deep soil. Cauliflower may now be planted out for a main crop. To prevent clubbing, a mixture of soot, cowdung, and red lead, made into a puddle, and the roots dipped into it, answers well. A little wood ash put in with each plant is a good practice; 2 feet or more in one way is not too much apart for the plants on good soil. The first Cauliflowers perhaps we ever saw were planted on a piece of ground last season where Spinach was cleared off. There was no time for digging or manuring it, but a surface cleaning was given. Holes were made with a trowel in the hard soil, the plants were lifted with the roots attached to the roots, a preparation of fresh cowdung and earth was ready, and a handful or two placed over the roots in process of planting; a good soaking of water was given, and regular hoeing was the attention they had. Scarcely any rain fell from the time of planting till they were ready for cutting. We had three successions treated

in this way, and we will long remember the good service they afforded **when** good Cauliflower was scarcely to be found.

Cabbage, Kale of sorts, and Savoy, may be planted on well-manured ground; dry poor soil makes them tough and rank-tasted. Cabbage may be planted (puddling them the same as Cauliflower) 1 foot each way, so that every other plant may be cut out when fit for use, and a full crop left. Kale generally requires 2 feet each way, and Savoy 1½ foot between each plant. Drills drawn moderately deep are preferable to all other systems of planting; and when the hoe is used, the filling in of the drills will be ample earthing-up. Brussels Sprouts should be planted extensively; they are a most serviceable vegetable; and such Sprouts as we saw exhibited at the late Horticultural Show in Edinburgh (we think named Dickson's Selected) were an argument in favour of their value. They were oval in shape, many of them as large as small hens' eggs, and very firm and sound. 1½ to 2 feet is the usual distance allowed between each plant. Broccolis of sorts may be planted 2 feet each way. All the Brassica tribe of plants are the better of being pricked out of the seed-bed when fit to handle, to keep them sturdy for planting out to stand. More Broccoli, such as Osborn's White, Walcheren, Snow's, and Grange's Autumn, may be sown for succession. Kale may also be sown for planting thickly in any ground as it becomes vacant. No useful space should remain unoccupied. Let Celery be pricked out, as formerly advised, before the young plants become matted; regular and careful watering is necessary; and though Celery is very hardy when growing naturally, the usual care bestowed on it, as on other plants when grown under cover, should be observed. Sudden changes from heat to cold, shade to sunshine, and tepid water succeeded by frosty water, are some of the evils which cause premature seeding. When pricking out the seedlings, let the roots fall full length into the holes when they are dibbled in; press the soil to the roots of all plants when they are turned out, instead of their necks, as is often done. Chervil and Parsley sow as before advised; the latter may be thinned out, and the thinnings planted 1 foot apart, thoroughly watered and afterwards well hoed; they will stand the winter well and give fine large leaves. A sloping ridge, in damp localities, is very suitable for winter Parsley, but there is no great hurry yet for arranging for late supplies. Salsafy, Scorzonera, and Chicory may now be sown and treated like Beet; to have fine clean roots of the two former, free, deep, well-broken ground is necessary. Less trouble with Chicory is necessary, as the young tops blanched in winter is all that is wanted; we find this one of our most valuable salads in winter, especially if Lettuces and Endive are scarce. Leeks may be planted as soon as they will handle nicely; a wide trench dug out and well manured as for Celery,

say 4 feet wide, and the manure turned in as thickly as possible. Let the Leeks have wide deep holes, leaving them clear in their hearts, and as they grow a little earth can be placed round them. It is the blanched part which is most valued, and the longer the white is the better the produce. Ridges for Leeks and Celery may be together, as they are both winter crops; single rows of Celery may be preferred, which is just throwing the soil (a spade deep and 1 foot wide) right and left, and giving plenty of decayed manure. Kidney Beans may now be sown, and any raised under protection may be planted out covering at night with large flower-pots may be necessary to protect them from frost. Lettuce may be sown thinly where it is to stand, and the thinnings planted in a cool shady position will give a succession. plenty of manure and deep soil are required if fine crisp Lettuces are wanted. Onions may be thinned out from 4 to 8 inches in the rows, but where bulbs 15 to 18 inches in circumference are wanted, 1 foot apart is not too much; dustings of guano and soot in showery weather will help their growth. Radishes of sorts, to keep up a supply, should be sown at short intervals; the Turnip kinds stand the heat best; in hot weather, heavy soakings of water are necessary to grow them crisp and palatable. Small Salads, such as Mustard and Cress, may be sown anywhere, but dryness and scorching sun give toughness and a strong taste to them. Golden and American Land Cress are good substitutes for Water Cress. Spinach will do well sown between bushes, or any vegetable crops which will not cover the space for some time; on dry poor ground Spinach runs very quickly to seed. Turnips may for some time be sown in moderate quantities. Swedes and American Red Stone sown on cool soil at the end of the month will keep up an autumn and winter supply; the Swedes are hardy, and do well for latest. Scarlet Runners, like French Beans, require good rich soil, plenty of water when fruiting, and the pods picked off before they get old, otherwise the plants soon become exhausted; rows topped down, to keep them dwarf, give large supplies all the season through; rows planted and well staked like Peas hide any unsightly portion of the garden, and are very ornamental.

Attention now, and for some weeks to come, will do much to secure well-grown wall fruit-trees, as well as to keep them fruitful, and save the knife in winter, which often proves disastrous to stone-fruit trees. Continue to take off all shoots coming straight out from the main branches, and if any strong watery growths have to be left to fill up space, stop them, and throw one shoot into three or four. The bearing-shoots left for next year on Morello Cherries, Peaches, Plums, and Apricots should be close to the base of present bearing-shoots—one or two are enough, and a top-shoot left to lead up the sap for the fruit this season; a

number of natural spurs may be formed, which, when well placed to the walls, are very valuable. A number of the top-shoots may be taken off Apples and Pears; doing a portion every few weeks gives no check, and at winter-pruning the work is made so simple that any one with the least instruction can do it. However, summer-pruning has always to be done according to strength of growth. In ordinary orchards, where trees can grow large and free, the case is quite different to gardens where space and order are objects, as well as plenty of fine fruit. We like to see trees, when established, form large firm leaves, little wood, and the bark be free from moss and canker: plenty of fibre growing in good healthy soil near the surface always secures this. If insects of any kind show themselves, a handful or two of Pooley's tobacco-powder, placed in a large potful of water and syringed on finely, will do much to keep off vermin. We have used this powder to some extent dry this season: in the late Peach-house here, about 100 feet long, a man went all over it in a few hours, throwing pinches of the dust over the young shoots, many of which were attacked with aphids, and threatened to be thoroughly infested with the vermin; but no further harm has been done, and the trees are now in full flower. Tobacco-smoke might have done harm, as many plants are in flower and Strawberries in fruit. Gooseberries and Currants may be kept free from caterpillar and "fly" by timely use of tobacco-powder and Clarke's insect-destroyer, if carefully syringed from under side of the bushes. Many of the fruit-trees planted lately will require a soaking of water and careful mulching—syringing overhead is beneficial in dry weather.

Roses will be making rapid progress. Grubs will be found among some of them, and will eat out the hearts of the flowers if not attended to in time. Syringe when fly appears, as recommended for fruit-bushes. Suckers should be taken clean off as soon as they appear. Plant out Violets in all spare corners—such as the base of walls, by margins of shrubberies, &c. When we place them where soil is bad, a hole is dug out and filled with good loam, then the plants have plenty to support them, and bloom abundantly. Suckers which are rooted answer best; but often when suckers are scarce we divide and replant the old plants, which always bloom abundantly. For forcing, Violets can be placed on a bed of earth above faggots of wood, and a lining of dung placed round in winter, after fitting a shallow glazed frame over the plants. Lifting good plants from borders answers well, but these are not always comestable by amateurs with small means. Asters, Stocks, and other plants may be kept in reserve to fill up vacancies in borders, &c.; good breadths of them planted out about the middle of the month come in useful for show and cutting. All bedding-out plants—such as Pelar-

goniums, Verbenas, &c.—should now have as much air and light as possible, using no protection except to exclude frost; but if newly out heat or shade of other plants, exposure must be given gradually. At the 20th, planting out may begin with the hardier sorts—such as *Ceolarias*, *Gazanias*, *Centaurias*, and others. Keep plants such *Perilla*, *Heliotropes*, and *Dahlias* to the last. Slight frosts would hurt them. We are not favourable to planting when ground is very wet as the earth cannot be placed kindly next the roots. Let the balls of soil be moist when planting is done, and little water may be required but if it is given, give enough to wet the whole bed, and apply the liquid freely as soon as it can be done properly. *Chrysanthemums* should be potted on into good turfy loam, and a little sand as soon as the pots get filled with roots. If they become pot-bound, much injury will be done: plunge the pots so that the sun will not burn up the roots. *Tulips* may now be shaded from sun. If nights are frosty, protection will be necessary. Bedding plants may be turned out of the pots in loose soil, keeping the balls together, and kept growing with protection can be given till beds can be cleared of bulbs, &c. *Balsams* and *Cockscombs* to flower under glass will require potting as the roots reach the sides of the pots; this, however, with *Cockscombs*, is when the flowers have shown themselves. Air, light, and gentle bottom-heat are necessary till they are ready for flowering, then cooler treatment suits them. Give plenty of liquid manure when they are blooming. It answers well to sow *Balsams* now for late blooming. All flowering plants will now be making active growth. They require more water but allow none to become sodden, and avoid wetting surfaces of the pots and allowing the principal roots at bottom to perish from drought. This often happens with *Heaths*, *Azaleas*, and other hard-wooded plants. Use tepid water for the more tender things. Window-plants require sprinkling overhead frequently, after dry dusty days. Keep surfaces stirred and free from moss and weeds. M. T.



NEW PLANTS OF THE PAST TWO MONTHS.

WITH the accumulating spring shows, these are now appearing somewhat numerous. As is usual at this season of the year, *Orchids* form a large proportion of the new introductions, which will be seen from the following list, all of which have received first-class certificates: *Odoglossum triumphans nigrescens*, a heavily-marked form of this species; *O. Hallii superbum*, a very fine spike of which was exhibited;

a splendid form of *O. Alexandræ*—all from Mr Wilson, gardener to William Marshall, Esq., Enfield. Mr Wilson staged three forms of *O. Alexandræ*, in ascending scales of quality, and quite distinct, though of the same species. The one to which the certificate was awarded had flowers nearly as large again as is usually seen; the spots also were much larger and more dense. *Dendrobium cucullatum giganteum*, very fine; *D. thrysiflorum*, a handsome new species with white petals and a rich lemon lip; the small but pretty purple-tinted *Vanda cœrulescens*; and a white form of *Lælia Pilcheri*, named *Alba*, from Messrs Veitch & Sons; *Angræcum Ellisii*, a recent introduction from Madagascar, producing small waxy-like flowers, from Mr B. S. Williams; and *Ophrys insectifera*, belonging to the half-hardy division of these elegant ground Orchids, and introduced from the Pyrenees—this came from Mr Neale, gardener to H.R.H. the Comte de Paris, Twickenham. So far new Orchids may be said to have been well represented.

In the way of ornamental-foliaged plants, the same award was made to two very handsome and graceful Palms—viz., *Thrinax elegans* and *Dæmonops plumosus*, the first from Mr William Bull, the second from Mr Green, gardener to W. Wilson Saunders, Esq., who also had a good-looking succulent named *Agave cuspidata*, quite distinct in form, to which a similar award was made; as also to *Encephalartos mirabilis*, an African species, also from Mr W. Bull; to *Dracæna Guilfoylei*, having a habit similar to *D. indivisa*, the leaves having a stripe or band of green along the centre, and an edging of blush and rose; to a capital hybrid *Solanum*, of compact growth, and in consequence named *compactum*, and bearing a good quantity of bright-coloured berries—both from Mr B. S. Williams; and to *Echeveria agavoides*, having the appearance of a small and compact-growing *Agave*, from Mr Perkins, nurseryman, Leamington.

In the way of hardy ornamental plants, Messrs J. Waterer & Sons, Bagshot, received first-class certificates for *Retinospora obtusa erecta*, a handsome, close-growing, neat-habited form, and for *Cupressus Lawsoniana aurea*, a deep golden variegated form of considerable merit; Mr B. S. Williams for *Peristrophe angustifolia aurea variegata*, a dwarf-growing, wiry-habited plant, that promises well as a bedder if sufficiently hardy—a native of the mountains of Java; and to Mr William Paul, for a handsome golden-leaved *Euonymus*, named *flavescens*.

Of new florists' flowers, Mr C. Turner, Slough, received first-class certificates for a beautiful blush-coloured hybrid perpetual Rose named *Marquise de Mortemart*, for *Azalea Mrs Turner*, with large pinkish salmon-coloured flowers, margined with white, and spotted with crimson.

purple on the upper segments, and to a striped semi-double *Primula Sinensis*, having rose-stripes on a white ground ; Messrs W. Cutbush & Sons, Highgate, for *Azalea François de Vos*, a bright crimson-coloured free-blooming variety that forces remarkably well ; Messrs A. Paul & Sons, Cheshunt, for a new hybrid perpetual Rose named *Madlle Eugenie Verdier*, with full, pale-blush pink flowers ; Messrs Rollisson & Sons, for *Epacris hyacinthiflora carminata*, well coloured, compact i growth, and free-blooming ; Mr Edmonds, Hayes, for a splendid large-flowering *Cyclamen Persicum*, named *giganteum*, with large, rich, rose-purple flowers of uncommon size ; and to Messrs Veitch & Sons for a dwarf-growing, free-blooming hybrid *Rhododendron*, named *multiflorum*, with flesh-coloured flowers, that appears to force well. The new Abyssinian Primrose, *Primula Contii*, recently exhibited by Messrs Veitch & Sons, is a plant both curious and interesting. It has a singular appearance, the foliage having that powdered look common to some of the show Auriculas, and it produces pale-yellow flowers in two tiers of corymbs, the growth being about 18 inches in height. Its great use will be for the purpose of hybridising, and a remarkable progeny may be looked for when crossed with other species of the same genus.

R. D.

THE EDUCATION OF GARDENERS.

DURING 1869, much was said in the pages of the 'Gardener' about the education of young gardeners. Those specially interested are much indebted to Mr David Thomson, "The Squire's Gardener," and other correspondents, for the sound advice given in their excellent papers ; also to the Editor, for the notes he occasionally added to these communications. As one of the "youngsters," I may be permitted to detail my experiences and difficulties in climbing the "tree of knowledge." I have never been in the condition of your unfortunate correspondent, "One in Despair," who, as musicians would say, struck the key-note of his "psalm of life" a full *crescendo*, but now seems inclined to end it with a wonderful *diminuendo*, in touching despairing accents. Perhaps he will be disposed to say I escaped his fate because I was not educated ! My school education was something as follows :—I went to school during winter, and herded cows in summer. This I began to do when I was only eleven years of age. At the age of sixteen I was bound to serve an apprenticeship in a gentleman's establishment in a far-north county of the "Land o' Cakes." My "education" was of such a character that, in the true sense of the words, I could neither read, write, spell, nor do any arithmetic. It has been said, That is how gardeners get such miserable low wages ; and how can it be otherwise while these "clarty Scotchmen" persist in making so-called gardeners of their "herd laddies," and send them "south" to take their places by the side of better-educated men ? Be this as it may, I can only state that the men who opened the garden-gates to me made the best they could of

the raw material confided to them. I found many difficulties in my way. The first of these was the *want* of that which "One in Despair" appears to think "is rather a drawback than otherwise to many gardeners"—namely, education. With the assistance of my master and mates in the bothy, I tried for a time to go through a course of lessons on elementary Structural Botany and Vegetable Physiology; but my early education had been such that I found myself unable to cope with the technical terms that came in my way. I therefore got disheartened, and ultimately gave up the lessons. Should the author of the paper headed "On Theoretical Instruction," in the 'Gardener' for March of last year, chance to see this confession, he will doubtless take it as a proof that "speculative knowledge is useless in learning the trade of a gardener." It may be so, if he intends all young gardeners to begin as I did, without the means, as I may say, of attaining such knowledge. Does this correspondent mean to say that it would be profitable for young gardeners to "exercise their hands," to the exclusion of exercising their brains at the same time? The man who could do this for one year of his apprenticeship, much less for three years, may "despair" of ever becoming a gardener. Some time after I had served my apprenticeship, I had to go back and attempt again the studies I had given up—namely, Structural Botany and Vegetable Physiology—simply because I could not get on without them. Now I maintain, had I mastered these partly, and been made to understand a little more fully the theory, along with the practice, of Horticulture, whilst I was serving my apprenticeship, I should have been a little, if not a long way, further up the "tree of knowledge" than I am at the present time. As to the prospect of finding myself in a better *worldly* position, I cannot say much—but

"A man's a man for a' that."

My experience clearly says to all my younger brother gardeners, Never be found

"Misspending all your precious hours,—
Thy glorious youthful prime."

There is one branch of education which, to some men, has no more claim on the gardener's attention than has Greek or Hebrew—namely, Drawing. Yet I consider it of great importance to a gardener, when he comes to take the management of a gentleman's establishment, and has other men to set to work. In the first place, he can have things much more to his own mind when he can produce his own plans on paper. Secondly, a glance at a well-wrought-out plan will at once give his employer an idea of what is wanted, and at the same time inspire him with confidence in its successful accomplishment. And, thirdly, to be able to work out a geometrical flower-garden plan on paper is to be able to lay it down correctly on a grass lawn, if need be. An employer must find it very inconvenient indeed to have to get some one, other than his gardener, to furnish him with a plan, if one be required. And still more provoking is it, if he finds his gardener cannot put them into execution, when obtained, without blundering over them. I was rather surprised to find the head man of a considerable establishment working out alterations on a large scale without any plans at all. The work might have been done in half the time had the ground been previously looked over, calculations made, and plans furnished. In one case, about 50 cart-loads of soil had to be moved a *second* time; in another, the verges of a walk were laid *three* times before the curve could be got to suit the eye of the director. These were big blunders; little ones are met with much more frequently. A gardener's life comprises much planning, and he ought to be able to execute as well as plan.

And now, in conclusion, a few words about gardeners' examinations. I heartily agree with all F. W. Burbidge has said on this subject in the 'Gardener' for December. What is gained in the working one's self "up to the scratch" is in reality the cream of the knowledge; and, after all, the necessary "cramming" may not be altogether without good effects on the young aspirant, although I by no means approve of it to the extent I have seen it practised. The gaining of certificates is more of a lottery than some people will admit. For example, a candidate could only reach second-class in Floriculture after having gained a *first class* at a previous examination; and to further prove this, a candidate who was awarded a first-class by the R. H. S. received a short time after a *second* from the Society of Arts; and a year after that again, a *third* in the same subject. Much depends on the questions: a candidate may be able to answer every question, while in another paper he may not be able to answer more than one half of them. A candidate, to attain first-class merit in successive examinations, must have a wide knowledge of the subject, as well as a smooth, quick-running pen. The practical examinations suggested by F. W. Burbidge, I am afraid, could not be very well carried out—at least, so long as the R. H. S. confines them to Kensington Gardens. But why not let these examinations be extended, so that gardeners in general throughout the country may take part in them? Let the R. H. S. extend them to each society in union with it, and conduct them on the same principle as the Society of Arts. If practical examinations were contemplated, they could be conveniently carried out on such occasions as the principal flower-shows, when it would be an easy matter to appoint a committee of gardeners to see that intending candidates could perform in a workmanlike manner the common work of the garden. There are right and wrong ways of handling tools, and gardeners who cannot wield their tools with ease, and even grace, I would exclude from examinations. The number of marks obtained by each candidate in these examinations could be added to each candidate's papers before being sent in to the examiner, and the certificates could be signed by each member of the committee before presenting them to the successful candidates. Were something of this nature to be tried, I feel certain that many of the societies would offer local prizes, to be competed for by candidates in their own localities. This would give some encouragement to candidates, and reward talent, and I have no doubt but it would do much to improve the general education of gardeners; and in course of time the certificates would become a passport to a good position, and be as necessary as a *good character* is in the present day.

" Then let us pray that come it may,
As come it will for a' that,
That sense and worth, o'er all the earth,
Shall bear the gree, and a' that."

R. I., G. P.



REPORT ON DOUBLE-FLOWERED PELARGONIUMS.

A COLLECTION, consisting of forty varieties of these novel and useful plants, w grown at Chiswick during the past year. They were also, with one or two *exceptions* indicated below, presented to the garden by Mr William Bull, of Chels and formed one of the features of interest in the garden during the late summer.

months. Having been received in the spring in the shape of small plants, it was decided to cultivate them in pots under glass, for which purpose these Pelargoniums seem especially useful. They were accordingly grown with much success in moderate-sized pots, and bloomed remarkably well in one of the span-roofed greenhouses, their healthy character reflecting much credit on Mr Barron and his assistants. The accompanying notes indicate the condition as to habit and inflorescence which these plants assumed, and may be regarded as recording as fair a verdict on their respective merits as could be arrived at from the growth of a single individual of each kind. The certified sorts, indicated by asterisks in the subjoined description-list, were the following:—

FIRST-CLASS CERTIFICATES.

Marie Lemoine, Madame Lemoine, Victor Lemoine, Gloire de Nancy.

SECOND-CLASS CERTIFICATES.

Sparkhill Beauty, Impératrice Eugénie, Andrew Henderson, Victor, Wilhelm Pfitzer, Memnon, Le Vésuve, Triomphe de Thumesnil, Triomphe de Lorraine, Signet.

The following is a transcript of notes made at intervals during the following season:—

Albina.—Vigorous, with faintly-zoned leaves, the trusses small; the flowers of a deep rose-pink, rather darker in colour than those of Madame Lemoine.

Andrew Henderson **.—This variety is of moderately-vigorous growth, with faintly-zoned leaves, and compact trusses of orange-scarlet flowers very freely produced. It is an ornamental variety well worth growing.

Ascendancy.—Moderately vigorous in growth, with faintly-zoned leaves; but too near Gloire de Nancy in the flowers.

Capitaine l'Hermite.—A vigorous-growing sort now superseded, with faintly-zoned leaves and loose cerise-scarlet flowers.

Conqueror.—A vigorous-growing variety, with green leaves and poor scarlet flowers.

Consul.—A vigorous-growing sort, with faintly zonate leaves; the flowers light scarlet, in a loose truss.

Cottington.—A dwarf-growing small-leaved bedding variety, with quite the habit and general character of the old Tom Thumb; the flowers scarlet, semi-double, loose, larger than those of Madame Rose Charmeux, and forming large and more showy trusses.

Delight.—Dwarf and moderately-vigorous in habit, with indistinctly zonate leaves, and fair trusses of large thin flowers; but too closely resembling those of Gloire de Nancy.

Emile Lemoine.—A variety of moderately-vigorous habit, having the leaves marked by an indistinct zone, and the flowers of a cream-colour, ragged, but forming dense trusses. An inferior variety.

Emulation.—A vigorous-habited green-leaved sort, with indifferent scarlet flowers.

Firebrand.—A coarse-habited green-leaved sort, with carmine-scarlet flowers of inferior quality.

Gloire de Nancy ***.—A handsome and moderately vigorous-growing variety, still retaining a high position in the double class. It has green leaves, and good bold trusses of well-formed, full, double, rosy-carmine flowers. This proves to be also a good bedding plant.

Impératrice Eugénie **.—A variety of remarkably vigorous growth, which, in the case of the Chiswick specimen, scarcely proved itself to be a free bloomer.

The leaves are indistinctly zonate, and the rosy-pink flowers are full, and sufficiently good to render the variety deserving of further trial. It is reported have been good in other collections.

Latona.—A vigorous-growing sort, with green leaves; the flowers of a light scarlet, in small compact trusses.

Le Vésuve **.—A vigorous-growing variety, of erect habit, with faintly-zonate leaves and fine trusses of large, well-formed, full, double flowers, of a light orange scarlet colour. A very promising sort.

Madame Lemoine ***.—One of the very best of the varieties in the whole collection. It is dwarfish in habit, with faintly-zoned leaves, and large, full, double, bright, rose-pink flowers, freely produced in good showy trusses.

Madame Rose-Charmeux.—A dwarf-growing slender variety, of the habit of the old Tom Thumb, producing numerous small trusses of loose bright scarlet flowers. A bedding variety in the way of Cottington.

Marie Lemoine ***.—A variety of first-class excellence. It is of dwarf stocky habit, with flat faintly-zoned leaves and large-sized flowers, forming abundant, bold, and effective trusses. This variety is much like Madame Lemoine in the colour and general aspect of its flowers; but it is of dwarfish habit, distinct in its foliage, and producing better flowers.

Martial de Chamfleur.—A variety of moderately vigorous habit with green leaves and thin double scarlet flowers; now quite superseded.

Mary Elizabeth.—A dwarf-growing variety, with faintly zonate leaves and rose-pink flowers, paler than, but not equal in merit to, those of Madame Lemoine.

Memnon **.—This is a meritorious variety of moderately vigorous growth, with faintly zoned leaves; the trusses are of fair size and compact, consisting of close well-formed light scarlet flowers. Distinct and promising.

Monsieur E. G. Henderson.—A dwarf-habited variety; the leaves with an indistinct zone; the truss good, bearing large flowers, but too near in colour to Gloire de Nancy.

National.—Vigorous in growth, with faintly zonate leaves and good double flowers in close trusses, but in colour too much resembling those of Gloire de Nancy.

Navarino.—Of dwarf habit, with indistinctly zonate foliage; the trusses apparently small, and the flowers rosy carmine, rough. A very inferior form of Gloire de Nancy.

Review.—A rather vigorous and straggling growing sort, with the leaves green, and the flowers of a light scarlet colour, growing in small trusses.

Rosetta.—Of vigorous growth, with green leaves and small trusses of scarlet flowers, which are rather deeper tinted than in other scarlet-flowered varieties; but they are too narrow-petaled and ragged.

Signet **.—A rather desirable variety, of moderately vigorous growth, with the leaves densely zonate, the trusses well filled, and the colour a rosy carmine, in the way of Emile Lemoine; but the individual flowers are of better form.

Sparkhill Beauty **.—This variety is of moderately vigorous growth, with faintly-zoned leaves and close trusses of bright rose-pink flowers, very much resembling those of Madame Lemoine; superior to that sort as regards smoothness of petal; but, taking other points into consideration, the preference must be given to Madame Lemoine.

Splendour.—A coarse-habited tall-growing sort, with green leaves, and scarlet flowers in loose trusses.

Sunshine.—Of vigorous growth, with the leaves green, the flowers deep rose coloured.

surpasse Gloire de Nancy.—A variety of moderately vigorous habit, with green leaves; the flowers too nearly resembling those of *Gloire de Nancy*, but not equal to that variety either in truss or in the quality of the individual blossoms.

Pom Pouce Cerise.—A dwarfish-growing variety, with faintly zonate leaves and compact trusses of pale cerise-scarlet flowers.

Pom Pouce Rose.—A dwarf-growing variety, with faintly zoned leaves and same habit; the flowers are of a rosy pink, loose and rough, and by no means equal in quality to those of *Marie Lemoine*.

Triumph.—Coarse-growing, with faintly zonate leaves, and large loose flowers of an orange-scarlet colour, similar in tint to those of *Le Vésuve*, but of inferior quality.

*Triomphe de Lorraine***.—A variety of some merit, being of moderate growth, with faintly zonate leaves and close trusses of carmine-scarlet flowers, of the same colour as those of *Emile Lemoine*.

*Triomphe de Thumesnil***.—A vigorous-habited sort of some merit: the leaves are green, not zoned; while the flowers, which are scarlet with a faint tinge of rose, are large and full.

Troubadour.—A tall coarse-growing variety, with indistinct zones and poor trusses of light-scarlet flowers.

Victor.—A coarse-growing sort, with faintly zonate leaves and orange-scarlet flowers in good-sized trusses, but not equal to *Le Vésuve*.

*Victor (G. Smith)***.—Dwarf and free-blooming in habit, with the leaves faintly zoned and the scarlet flowers in compact trusses. The flowers are of the same colour as those of *Wilhelm Pfitzer*, and closely resemble those of that variety, but the foliage is smaller. A variety well worth growing. Received from Mr G. Smith.

*Victor Lemoine****.—One of the finest of the varieties in the whole collection. The plant is of a rather vigorous habit of growth; the leaves are marked with an indistinct zone and the flower-trusses are larger. The flowers themselves are somewhat rough, having serrated petals; but they form a fine head, and are of a rich orange-scarlet, brighter than *Le Vésuve*.

Vivian.—A variety closely resembling *Gloire de Nancy* in every respect, but scarcely equal to it in merit; the leaves are very indistinctly zonate.

*Wilhelm Pfitzer***.—One of the useful second-class sorts, of moderately vigorous growth, with indistinctly zonate leaves, and fair-sized trusses of good full flowers of a light-scarlet colour. Received from Messrs Carter & Co.

Zelinda.—Dwarf in habit, with indistinctly zonate leaves. The flowers are small and poor, scarlet, resembling those of *Triomphe de Thumesnil*, but not so freely produced.—‘Proceedings of the Royal Horticultural Society.’



GARDEN RECORDS.

NO. V.

WORTON COTTAGE, ISLESWORTH, LONDON, THE RESIDENCE OF
W. BECK, ESQ.

(Continued from page 178.)

Our illustration is drawn from this place—so long associated with the successful cultivation of florists' flowers—for the sake of indicating what Mr Wiggins, the gardener at Worton Cottage, is doing with the *Cyclamen*. Not that we wish it

to be supposed Mr Wiggins is the sole successful cultivator of the Cyclamen in the London district, but because he may be said to have been the father of the improved system of culture that has made the Cyclamen, during the past few years, such a striking feature at the early metropolitan exhibitions. Such illustrations of Cyclamen culture as Mr Wiggins and others present are almost entirely confined to the neighbourhood of London; elsewhere we have seen but poorly developed examples, that could only serve to impress others with the conviction that the Cyclamen is a flower difficult of cultivation, instead of being one of the easiest in the whole catalogue of florists' flowers.

On page 183 of the 'Gardener' for 1869, H. E. I. C. S. treated the readers of the 'Gardener' to an excellent paper on the culture of the Cyclamen, himself a very successful cultivator. The practice advised by this correspondent and that followed by Mr Wiggins differs but very slightly, and then only in matters of minor detail.

At Worton Cottage could have been seen, a short time ago, a small lean-to house, wholly filled with Cyclamens, every available part of the house accommodating altogether some 300 finely-bloomed plants. A large number of these were in large 48-sized pots, some in 32-pots, and a few extra-sized specimens in 24-pots. It was a delightful little show in itself, and there was so much of variation in the flowers that there were representatives of a great many shades of colour, from the purest white to rich self-coloured rosy-crimson flowers. In point of quality there could be perceived an occasional example of the narrow-petalled flower, somewhat curiously twisted, and large bold flowers, with broad stout florets, and of the finest quality. By far the largest number of these plants had from 20 to 60 expanded flowers; some of the larger plants had fully 100 flowers. The first feeling of surprise was that of something akin to wonder at such a splendid development, not only of flower, but also of foliage; the second, that such results are brought about by a very simple course of cultivation, it shall be the object of this paper to sketch.

A leading feature in the mode of treatment adopted by Mr Wiggins and others is, that the resting process—the period of rest, that stage of the Cyclamen's career when it became so debilitated by semi-starvation as to be almost incapable of again reaching a healthy development—is altogether abolished, and that with the happiest results. A more generous course of treatment is rewarded by consequences so startling as to effectually demonstrate the *rationale* of the cultivable process. What can be so well done about London is surely possible elsewhere, and with the same pleasing results.

Each year Mr Wiggins raises a batch of plants from seed, and we would advise all cultivators to follow his example. The seed is sown as soon as ripe, or at any rate by September and October, and a soil used is made up of good loam, sand, and rotten manure pulverised when in a thoroughly dry state. The seed-pans are placed in a propagating-house or hotbed, and in four or five weeks the seed-leaves put in appearance. The temperature maintained by Mr Wiggins for the purpose of raising seed is from 60° to 80°. As soon as the plants can be handled, they are pricked off in small groups in large 60 or 48 pots, and placed on shelves close to the glass in a warm house, and encouraged to make growth during the winter. As soon as the month of March is reached, the largest of the plants are shifted into 60-pots and placed in a warm frame having a slight bottom heat, and kept close till established; and when the weather is fine and genial, air is admitted. A later shift is made into 48-pots about May or June, and the plants are still retained in the frame. During hot weather they are frequently sprinkled overhead, besides being freely watered at the roots. Generally, the

klings are given early enough in the day to admit of the leaves drying before
ame is closed for the night, if necessary to close it. Here growth is made,
-buds formed, and the plants are taken into the house about September,
om this time on to April a plentiful supply of bloom is secured.

en the plants have done blooming, they are stood out of doors in a shady
and not allowed to become by any means roasted, as is too commonly the
but kept moist, though allowed to ripen their foliage. The soil is then
n in good part from the roots, and they are repotted somewhat lightly in
soil, placed in a cold frame, and kept close for some time, and then treated
the case of the seedling plants.

sh is a mere outline of Mr Wiggins's treatment of the Cyclamen, and our
rs who have an opportunity afforded them of visiting Isleworth can see for
elves what can be done under such a process. Our correspondent H. E. I.
, who has this season been as successful as usual with the Cyclamen, wrote
recently, and stated, "If you intend saying anything about the Cyclamen,
e you will most strongly advocate my opinion, that it is not a flower for
, but for November, December, January, and February, being at all other
almost out of season." Our correspondent's aim was to impress upon culti-
s that this flower can be had in bloom at the dead season of the year, when
is little else to make the greenhouse and conservatory look gay.

addition to the Cyclamen, splendid strains of the Chinese Primrose, and of
Polyanthus, are grown at Worton Cottage: probably the quality of the last
ed can scarcely be excelled in the present day. As of old, the Pelargonium
plays an important part, and a commodious square show-house full of these
soon be a fine floral spectacle. At no period of the year can the sacred pre-
ts of Worton Cottage—sacred in a floricultural sense—be trodden by the
or without seeing something of interest, and learning some lesson worthy of
g treasured up in the memory. At all times the houses and grounds are
els of cleanliness and order, and Mr Wiggins is never slow in freely impart-
any information asked at his hands by the inquiring visitor.



TOMATO CULTURE.

TOMATOES—or, as they are sometimes termed, Love Apples—should receive every
ouragement in the way of aiding them to make strong plants during the early
t of the month of May, so as to have them ready for planting out about the
h of the month. If there is not enough of wall available to plant them
inst, I find they ripen and colour their fruit well if planted in a single row in
front of the fruit-trees on the wall, but about 4 or 5 feet from the wall. The
ders should have a south aspect, and the plants be trained to stakes 3 feet high,
as soon as they reach the top of the stakes they should be stopped, and kept
ched in as soon as they have bloomed; the young fruit should be well thinned
, and the foliage kept spare so as to admit the sun. At this stage of their
wth the plants should never want for water; and should the weather be very
, a good watering at least twice a-week with liquid manure should be given:
s I find to be much better than planting the Tomatoes in manure. The best
d I have ever grown is known as Powell's Dwarf Prolific Red; this I have
d at least twelve years, and in most seasons am enabled to keep up a supply
six months—from July till after Christmas. The first crop I take from pot
nts grown under glass; these are succeeded by those ripened in the open air;

and for the latter part of the season—that is, November and December—those not ripe about the first week in November are thus ripened;—cut the plants just above the ground; take off all the leaves, tie the stems together in bunches with the fruit on them, and hang them over the flue in the forcing-house, or any place where there is heat, and they will there ripen their fruits.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



CROPPING VINE-BORDERS.

TO THE EDITOR OF THE 'GARDENER.'

SIR,—In reply to the practical questions of your correspondent R. M. S. in the last month's number of the 'Gardener,' as to whether I would, under certain circumstances named by him, "commend cropping" vine-borders with vegetables, I beg to say that it would depend upon circumstances. In my former article I advocated the practice of cropping our fruit-tree borders as a necessity, the discontinuance of which would not be justified by the result—*i.e.*, the extra crops of fruit obtained—and I would be guided by the same considerations with regard to vine-borders. "Suppose," as your correspondent puts it, "I had to make vine-borders, and plant young Vines in a place in which I had just entered on the duties of gardener, and had a reputation to make, would I commend cropping the borders?" In answer to this I would say, that if I was so situated, and was short of cropping space, I would crop the vine-borders without hesitation, and not fear the result; that is, the late vineries, for of course the necessity of protecting the borders of the earlier houses would prevent their being cropped. I did not mean it to be inferred from my former statements, that we cropped all our Vine-borders here, but only the one spoken of. When I came here five years ago, I found as usual that the vine-borders had been protected and mulched regularly, and the roots consequently near the surface. To have dug them, of course, would have been madness, and as the vineries which have been planted since have inside borders, we have not had an opportunity of cropping them: but the border of the vinery in question (a late Hambro' house) had evidently been dug regularly, and we continued the practice. The Vines have improved every year, and I think I may say the crops hitherto have been remarkable both for weight and finish, and the prospects for another year are all that could be desired. This winter we have widened the border, as we found the roots had encroached under the asphalt walk in front, the crust and drainage of which we have removed, and filled up with common garden-soil. As it will, however, be necessary to divide the house, and force one half earlier in future, the border will be protected, and for that reason not cropped till later, but the other half will be cropped as usual; and if R. M. S. will honour us with a call about the end of July, and again about the end of September, he will be able to judge for himself. Digging vine-borders may be root-pruning under another name, as R. M. S. says, or it may be whatever anybody likes to term it. I state facts; but, as I stated before, the damage sustained by the roots, when the borders are dug regularly, is imaginary—if the trees are planted deep enough at the first. This I have proved to my own satisfaction at least; and I can assert, that if digging the borders of fruit-trees be only another way of root-pruning, I never in any case knew it to prevent the necessity of root-pruning in the usual way.

J. SIMPSON, Wortley.

THE CULTURE OF POINSETTIA PULCHERRIMA.

As in page 43 of the present volume of the 'Gardener' you were led to speak in terms of high approval of the Poinsettias exhibited at the Liverpool Chrysanthemum Show in November last, it may perhaps interest some of your readers to know my mode of treating this most indispensable winter-flowering plant. Probably no plant in cultivation is more ornamental during the winter months, when it is well grown : mingled with flowering and foliaged plants, it gives a rich bright hue of colour, not otherwise attainable in such a perfect degree at that particular season of the year.

In order to have large plants, I take those that have flowered the previous season, which up to the end of March or beginning of April have been kept rather dry, in a temperature of from 45° to 50° . Previous to starting them into growth, the plants are cut back to within 10 inches of the "collar ;" and when brought into a higher and moister temperature they will soon break into three or four nice shoots. When the young growth has developed a few leaves, the plants are repotted, and in the act of doing this some of the old roots and soil are removed. The shift is made into a larger-sized pot, and the compost used made up of two-thirds light turfy loam, one-third peat and decayed cow-dung, together with a liberal sprinkling of silver sand and some small pieces of charcoal : such a soil as this I have always found to grow the Poinsettia well. Good drainage is of great importance to the wellbeing of the plants. A further shift is made into a 10 or 12 inch pot, and in these pots the plants are allowed to bloom. In making this shift, I do not nearly fill the pots to the rim, but allow plenty of space for top-dressing : this I have found a most material aid in the full development of the gorgeous-coloured bracts. For top-dressing I use a soil richer than that employed in potting the plants. After each potting a slight increase of temperature is given. After the last potting, when the roots have taken hold of the soil, I take off the tops of some of the stronger shoots, so as to give more blooming wood, and at the same time throw increased strength (by the act of stopping) into the younger shoots. This gives from six to eight shoots to a plant. From the middle of August until the end of September, plenty of air is given to the plants to make them sturdy in growth ; after that they are placed in a higher temperature, and treated occasionally to a dose of liquid manure, made of cow-dung, sheep's dung, and a little soot ; and some guano is given occasionally, as a change. I always make a point (and I wish to impress its necessity on the cultivators of the Poinsettia) of administering the liquid manure of the same temperature as that prevailing in the house.

As soon as the plants show signs of colouring, I give more liquid manure and increase the temperature, and at the same time use the syringe freely. Under such a course of treatment as this I have obtained bracts measuring from 18 to 21 inches across, and with from five to seven heads on a plant. Who can withhold admiration from such grand objects, especially when there is found in combination fine and healthy foliage? I have been most successful in growing the plants dwarf for table decoration, having them in pots about 6 inches in diameter, with two or three bracts to a plant, measuring from 12 to 15 inches across, and with a fine leaf foliage to boot. These I have found to require more attention than large plants, but do them well. The height of both pot and plant averages some 12 inches only.

In commencing their culture, I make cuttings of the old stems in the month of April, cutting them up into pieces with three or four eyes, and allow them to lie a few days before inserting them in the cutting-pots; and when placed therein, I leave about two eyes above the surface of the soil. When rooted sufficiently, they are potted off into 4-inch pots, and when well established, and a rapid growth has set in, the leading shoot is taken out, and by this means about three shoots of equal development are obtained from which to form the plant. When they have made a few inches of growth, the shoots are tied down to stakes, and kept as near the glass as possible, so that both light and air can aid the production of robust, healthy foliage. When repotted into the blooming-pots, a compost similar in character to that used for the larger plants is allowed them; and as in the case of the specimens, space is left for top-dressing. These plants are greatly benefited by being placed in feeders, and by attention being paid to watering—both with water and liquid manure, which should be given in abundance. At the same time the syringe is freely used overhead.

In cases where the cultivator has plenty of heat at his command, a supply of plants of various lengths may be had, by putting in cuttings from May till the end of July; the side-shoots of some plants, and the tops taken from the leading shoots of others, can be made use of to give cuttings, and these will be found to give at least a single head of bloom; and where there is no convenience for growing large plants, the following method will be found very useful:—Place the cuttings each in a thumb-pot, allowing them to become dry at the base, but not to be suffered to flag overhead, or the best leaves are lost, which is a matter of considerable importance. When rooted, put them off into 4-inch pots, and they will be found to make very useful plants for decorative purposes. By so obtaining a supply of plants of various growths you can supply the conservatory throughout the dull winter months. The

conservatory, however, should be kept moderately warm, by way of giving the plants every encouragement.

As a garnishing for dessert, I have found the coloured bracts of the *Poinsettia* very useful indeed, especially when laid on a few Fern fronds round a dish of fruit.

WILLIAM BIGGS.

SANDFIELD PARK.



HINTS on the Formation and Improvement of Garden Lawns, Croquet-Grounds, Cricket-Grounds, &c.

A good close velvety turf is one of the most ornamental objects dressed ground can boast of, and oftentimes the most difficult to obtain. The following suggestions, based on many years' practical experience, are therefore offered.

In the first place, careful preparation of the ground proposed to be laid down to turf is necessary. This should be commenced in the winter by draining, if found requisite, and digging to the depth of 6 to 12 inches, according to the nature of the soil. When this has been done, the land should be levelled and made firm with a spade, and subsequently raked, to remove stones, &c. Should the natural soil be too stony, it will be advisable to procure a supply of good mould, and spread this over the land to the depth of 2 or 3 inches. If the soil is poor, some well-rotted stable-dung will be very beneficial. Where this cannot be obtained, we would advise, as the best dressing of artificial manure, 2 cwt. of superphosphate of lime and 1 cwt. of Peruvian guano per acre. In March, after the ground has been made thoroughly fine and clean, a heavy iron roller should be used to make it perfectly level; and as the subsequent appearance of the lawn depends in a great measure on this part of the preparation, we cannot too strongly urge the importance of its being well done. The ground should then be evenly raked and the seed sown. April and September are the best months for sowing. As to the sorts of seeds suitable for garden lawns, &c., we can, after a long course of personal observation of the numerous kinds which have come under our notice, confidently recommend the following varieties as most certain to produce a close velvety turf:—

Cynosurus cristatus, Crested Dogstail.
Festuca ovina, Sheep's Fescue.
Festuca tenuifolia, Fine-leaved Fescue.
Lolium perenne Suttoni, Suttons' Dwarf Perennial Rye-Grass.
Poa pratensis, Smooth-stalked Meadow-Grass.
Poa sempervirens, Evergreen ditto.

Poa nemoralis, Woodside Meadow-Grass.
Medicago lupulina, Yellow Trefoil.
Lotus corniculatus, Birdsfoot Trefoil.
Trifolium repens perenne, Perennial White Clover.
Trifolium minus, Yellow Suckling.

These should be mixed in their proper proportions, and sown at the rate of 3 bushels or 60 lb. per acre (English), or 1 gallon to 6 rods or perches.

After the sowing has been accomplished, the ground should be again rolled, and as soon as the young plants have attained the height of 2 or 3 inches, the whole plot should be carefully gone over with a sharp scythe. Frequent mowing and rolling are indispensable to maintain the turf in good order. By adopting these means, a close greensward will be obtained in nearly as short a time as a

lawn produced by turfs, while it will be far more permanent, and at much expense.

It will sometimes happen that annual weeds indigenous to the soil come these can easily be checked, if not destroyed, by mowing them off *as soon as make their appearance*. Plantain, Dandelions, and Daisies too, will often appear and these must be cut up each one singly about an inch below the surface (deeper), and about a teaspoonful of cut salt dropped over the part. Birds are very fond of grass seeds, and care should be taken to keep them off until the grass is well up.

For lawns requiring improvement, it is only necessary to sow fresh seed in the spring or autumn, using a small-tooth rake, and rolling afterwards. The presence of moss in lawns is generally a sign of poorness in the soil, or a want of drainage; to its removal, we advise, after raking off as much moss as possible, a top-dressing of quicklime mixed with rich compost, applied in the winter, and a sowing of more seed in the spring; or a top-dressing of soot will, by encouraging the growth of grass, destroy the moss. This should be applied in the spring, at the rate of about 16 bushels per acre.

On croquet or cricket grounds, where the turf has become bare through constant use, we advise a thick sowing of seed on the bare spots in September or early in March, rolling subsequently, and mowing as soon afterwards as practicable. A slight dressing of manure over the whole playing square will often be found beneficial in encouraging the growth of finer kinds of grasses, and help to produce a close-growing turf. We should not omit to mention that here, as in fine garden lawns, mowing alone will not insure a good bottom without that compression which a roller alone can give.—*Sutton & Sons' Amateurs' Guide*.



THE ARCHIMEDEAN LAWN-MOWER.

By way of indicating what from a trial we have found to be highly serviceable and therefore worthy of commendation, we here present an illustration of a very useful garden requisite. For small villa gardens it appears to be peculiarly adapted, both because it can be used by the proprietor without the intervention of a labourer, and also because of its fitness for places where there is only a small piece of grass lawn.

It is of American origin, and quite original in character, differing from other lawn-mowers. "It is a very simple machine to look at, and a very simple affair altogether, yet it is so constructed that it will cut grass in almost any position, and of any height." It is pushed along by the operator, not drawn, like the case of other machines. When the details of the machine are examined the difference from all others is at once perceived, for there are no guiding rollers; instead thereof there is a flat iron sole on either side, which slides along over the grass. The cut of the mower, which is about 14 inches in width, consists of a knife made in the form of an Archimedean screw, which revolves with great rapidity, and does its work well. Unlike other mowing-machines, it does not collect the cut grass, but simply scatters the blades evenly about the sward. In mowing the grass be cut at short intervals, this is of small moment, as the grass would soon wither; at any rate, the process of sweeping the grass away on occasion but little labour.

The cutter-bar can be altered as desired by means of a small screw-nut, which

raises or lowers the sole as required. "In this way it can be set to cut the grass close to the ground, or an inch or more above it, as may be wished, which is an important feature, as by going over the ground three or four times a very heavy sward of grass may be inch by inch reduced. The height of the cutter may also be regulated somewhat at will by the operator's raising or lowering the handle



of the machine; and thus it is enabled to cut readily up-hill and down-hill, and over uneven ground." Another advantage is, that it will cut the grass as readily in a wet as in a dry state, so that whenever it is convenient the machine can be brought into operation.



HORTICULTURAL EXHIBITIONS.

THE Royal Horticultural Society of Ireland held a show of Hyacinths and early spring flowers at the Rotunda, Dublin, on the 24th of March, when the amateur cultivators round Dublin came out in strong force, and in all probability could

have this season held their own against the best that any other Hyacinth-growing district could do in the United Kingdom. Some amount of external pressure had to be employed to induce the Council to take it up, and a charming show resulted; but as of old the "stars in their courses fought against Sisera," so now did the elements fight against the promoters of the show, and in consequence of the rain but few visitors comparatively could inspect an effective floral display. The chief amateur cultivator of Hyacinths was Mr Brannigan, gardener to S. M. Tandy, Esq., Appian Way, who carried off nearly all the leading prizes in the several classes in which he competed; while in the Nurserymen's classes, Messrs A. A. Campbell & Sons, of Glasnevin, who, like Mr Tandy, staged some very finely developed flowers, had it all their own way. Besides Hyacinths, there were Cyclamens and Tulips, both indifferently grown; Violets, Primulas, very fine; forced shrubs, Lily of the Valley, &c. One feature of the schedule was a gardener's cup, subscribed for by the practical gardeners of Ireland, and awarded to the gardener who took the greatest number of prizes. This handsome trophy fell to the lot of Mr Brannigan, gardener to S. M. Tandy, Esq. The Council of the Royal Horticultural Society ought to be much encouraged by the floral success attending the attempt made to establish in Dublin a show of Hyacinths and early spring flowers, and we hope it will again appear in the programme of their doings for 1871.

The first spring show of the Royal Botanic Society was held at the Regent's Park, on the 30th of March, and presented a few very interesting features. Forced flowering plants and shrubs made an effective display; so did the Cinerarias and Cyclamens; of the last named a great number were staged, all of that fine quality incidental to London. In the class for 6 Cinerarias, Mr James, gardener to W. F. Watson, Esq., Isleworth, had nice specimens of Mrs Reeves, white, margined with rosy crimson, and dark disc; Uncle Toby, deep blue, a good self; Agrippa, white, with narrow edge of rosy purple; Lord Elgin, a free-blooming rosy-crimson self; Snowflake, white; and Master F. Watson, broadly margined with crimson-rose: the style of growth of these plants quite recalled the days when Mr Turner used to exhibit these charming spring-flowering plants. Cyclamens were grand in the extreme—the splendour of development of such young plants taught the utter fallacy of the resting process; and yet one of our weekly contemporaries, noted for sticking so closely by the old traditions of horticulture, in its latest issue, in replying to correspondents, actually recommended in each instance the period of rest! Mr James was first with 6 fine plants, each averaging from 60 to 100 flowers; Mr Edmonds was only just inferior and Mr Stevens only just beaten for second honours. Primulas were fine, but contained nothing calling for special remark. Mr Ware, Hall Farm Nurseries, Tottenham, who has made a great name for spring-blooming, hard herbaceous, and Alpine plants, had a very interesting group of the former, comprising the fine white-flowered *Trillium grandiflorum* (what a pity it is that fine plant is not oftener seen!); *Hoteia japonica*, *Richardia Ethiopica*, the variegated Crown Imperial, &c. In addition, Mr Ware had a group of twelve Liliaceous plants, grown in shallow pans, and exceedingly interesting, comprising *Scilla Siberica*, *S. bifolia*, *S. præcox*, the charming *Triteleia uniflora*, *Muscabotryoides*, *M. botryoides pallida*, two very pretty varieties of the Grape Hyacinth; and the purple *Erythronium dens-canis*; and an equally charming group of Alpine plants, including some very pretty Primulas—viz., *P. nivalis*, *P. denticulata*, *P. marginata*, *P. pubescens*, *P. erosa Fortunei*, *Narcissus juncifolius*, very pretty dwarf species, &c. Camellia blooms were plentifully produced, of good average quality. In the Nurserymen's class, Messrs A. Henderson & Co, Pine-Apple Place Nursery, were first; and in the Amateurs, Mr A. Wilkie, Addi-

son Road, Kensington. The stand furnished by Messrs A. Henderson & Co. contained Americana, blush; Carswelliana, red; De la Reine, pure white, a fine large flower; Sarah Frost, carmine red, large and full; Valtevaredo, deep rose, large and full, very fine; Henri Favre, rose crimson; Double white, fine; Napoleon III., pink, striped with red; and Mathottiana, deep blood crimson.

Of miscellaneous subjects of more than ordinary interest must be mentioned a fine group of pot Roses from Messrs A. Paul & Son; a group of the new Rose Princess Christian from Mr William Paul, a beautiful pale-blush flower, finely cupped, and invaluable for forcing; a first-class certificate was awarded to this, and we mention it here, fearing that the circumstance was omitted in our notes on "New Plants of the Past Month;" also a collection of small but well-bloomed plants of the new double-scarlet Thorn; Reseda odorata eximea, a giant Mignonette, with very large flowers and delightfully fragrant, from Mr F. Parsons, nurseryman, Brighton, awarded a first-class certificate; and blooms of the new perpetual-flowering Picotee, Prince of Orange, from Mr Perkins, Leamington, also awarded a first-class certificate, and a really perpetual bloomer, as Mr Perkins loses no opportunity of exhibiting it. Such are a few of the prominent points of this pretty show.

ROYAL HORTICULTURAL SOCIETY, April 6.—This was a charming spring show, perhaps one of the prettiest and most interesting seen for years, those things commanding the greatest amount of interest being found, as is often the case, in the miscellaneous class. A charming bank of Cyclamens, of considerable extent, showed off to the best advantage this beautiful flower. Mr C. Turner was first with six splendid specimens, combining size and freedom of bloom with good variation and the best quality. The best collection was staged by Mr Edmonds of Hayes; the next best by Mr Stevens, Ealing. Mr James was again first with six Cinerarias, with larger and better-developed plants than those shown at the Regent's Park. On this occasion his group comprised Mrs Hardman (James), broadly edged with violet purple; William Reeves (James), margined with rosy crimson on a white ground; and others identical with those previously noticed. Prizes were offered for six Coleus, but, singular to state, none put in appearance; also for six Amaryllis. Mr Baxter, gardener to C. Keiser, Esq. of Broxbourne, staged one group of the latter that had been much injured by the frosts during their journey to the show.

Space will not permit of our doing justice to the magnificent collection of flowering Orchids staged on this occasion, made up of groups supplied by Mr Denning, gardener to Lord Londesborough, Messrs Veitch & Sons, and B. S. Williams. They were in themselves an exhibition, and that of no mean order. Messrs Veitch & Sons and H. Lane & Sons had groups of forced Roses in pots, the former having plants of superb quality, from the delicate flowers of Tea-scented Devonensis to the rich deep colouring of H. P. Horace Vernet. A group of standard Roses in pots was also staged by Messrs H. Lane & Son.

GLASGOW AND WEST OF SCOTLAND HORTICULTURAL SOCIETY.—This, the first show of the season, took place in the City Hall. As a floricultural display it was not equal to many of its predecessors. As regards Hyacinths, there was not that decided quality nor the quantity of plants sometimes seen. Mr G. Irvine, gardener to T. Blackwood, Esq., Port-Glasgow, and Mr N. Glass, gardener to J. C. Bolton, Esq., Carbrook, took the leading positions. The nurserymen's class was not so well contested as it should have been. Miss Cook deserves special notice for bringing out a lot of well-managed bulbs, grown in water, and the foliage of which was neither blanched nor drawn up from want of light and air, as is the case with indoor Hyacinths improperly tended. This is a

fact that never ought to be lost sight of by window gardeners for at least a month before the blooming period. It has occurred over and over again that Von Schill has been singled out as the best spike at exhibitions, and we have again the same fact to note. Among Tulips the chaste white Pottebakker, the effective and well-named Vermilion Brilliant, and the orange and red Tournesol, maintain a front-rank position. Of the Narcissus, Grand Monarque, a fine white, and Soleil d'Or, a good yellow, were incomparably the best. As to Crocuses, none can vie with the whiteness and size of Queen Victoria, or be more captivating than the suffused lavender-and-white Albion. Another bulb that is gaining in importance is the Hippeastrum section of Amaryllids. They afford such great variety, they are not difficult to cultivate, and the whole of them are so ornamental, that we are surprised they are not exhibited in greater numbers at early shows. The Cyclamens from Messrs Boyd and Walker were well cultivated. Cinerarias were well grown and shown by Mr M'Dougall and others. A seedling of decided value in the Messrs Austin's collection, named Countess of Eglinton, had a blue disc, with a prominent ring of white, and then a deep violet ray. Chinese Primroses are seen everywhere just now enlivening the greenhouse or the entrance-hall or boudoir. Lily of the Valley is so much sought after, that we do not wonder the fine pots of it shown by Mr Graham, Garscube, were so great a source of attraction. Camellia plants and Camellia flowers were much beyond the average, Messrs Walker and Boyd having Mathotiana and Countess of Orkney respectively, in praiseworthy condition. Tree Mignonette was very good, although scant in quantity. Azaleas, as usual, were quite a feature of the show. The Tree Ferns from Oak Park House, Mount Vernon, decorated the orchestra, and it is a pity there were not more of them distributed throughout the hall to tone down bright colours, and to assist in breaking uniformity. Mr Methven, gardener to Colonel Campbell, Blythwood, sent a very meritorious box of Cherries.

The directors, judges, and a few friends, dined, after the Show, in the Crown Hotel. Mr James Graham, Garscube, presided, and Mr Thomas Granger, Partick, officiated as croupier. After the usual loyal and patriotic toasts, Mr Anderson, Meadow Bank, proposed the "Glasgow and West of Scotland Horticultural Society;" and remarked that he was glad to see a continual infusion of new blood among exhibitors, and especially of new plants upon the exhibition tables.

SPRING EXHIBITION OF THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—This Exhibition took place as usual in the Music Hall, George Street, Edinburgh. On the recent occasion the experiment was made of keeping the show open two days—the 29th and 30th of March—but we do not believe its success will warrant its repetition. For a few years after these spring exhibitions were begun, the public came in crowds to see them, and put up with the crushing and jostling for the sake of seeing fine masses and groups of spring bulbs and brilliant displays of Azaleas and suchlike; but the novelty has now worn off, and so has the attendance, and it must continue to do so, unless a more spacious and accessible building can be procured, wherein to hold flower-shows and kindred exhibitions; a place that, for area, surroundings, and easy access, could be made an agreeable promenade, where there should be ample space to admit of the music of a military band being played without danger to the ears of the lieges, as is the case where they are held at present; and we think it is hardly creditable to the enterprise of Edinburgh that such a building does not exist either in east or west Princes Street Gardens. It might combine in one a winter garden, musical promenade, and a place where not only flower-shows, but exhibitions of poultry,

dairy produce, and, within certain restrictions, exhibitions of all industrial productions, might be held.

But to return to the recent flower-show. We remarked that while the spring bulbs were less numerous and not so fine as we have previously seen them, every other department of it was above the average of other years. The Azaleas were especially well represented, so were stove and greenhouse plants, Rododendrons, and specially forced Roses; they have made a sudden leap forward. Among subjects which we noticed were a fine collection of Cyclamens, exhibited by Downie, Laird, & Laing; amongst them *Rosium grandiflora* and *Purity* were specially beautiful. We predict quite a run on these pretty spring flowers, which have been far too long neglected. The same firm exhibited a collection of flowering plants, as did Messrs Drummond of George Street, Gordon & Sons of Murrayfield, Messrs Dickson & Sons, who in addition had a great many fine small Roses in beautiful bloom most creditably managed. Mr Methven had in addition to a collection of flowering plants a very fine collection of foliage and decorative plants; Messrs Dickson & Co. a fine collection of flowering and other plants.

A feature that attracted much attention was Mr M'Intosh's *Rhododendron Argentii*, a handsome plant about 8 feet high, with a great many fine trusses of white bloom on it, and valued by its owner at £100. Mr Patterson, gardener to Professor Syme, exhibited a fine variety of *Catleya*, one of the numerous *Trinia* varieties, but a very handsome one. The eighteen Hyacinths that got the first prize in their class came from Luffness, and did much credit to Mr Cow, Mr Hope's gardener; the following are the varieties, Baron Von Tuyll, Howard, Lord Macaulay, Von Schiller, Marie, Gigantea, Grand Lillias, Koh-i-noor, Blondin, Mont Blanc, Mimosa, Prima Donna, and Charles Dickens. Mr D. Kerr, gardener to A. B. Shand, Esq. of Glencarse, was first with 12's, exhibiting nearly the same varieties as Mr Cow. Mr Lees of Tynninghame exhibited a plant of *Phalsenopsis Schilleriana*, with 200 blooms open on it. On no previous occasion have we seen so good a display of Pears and Apples at so late a period of the spring—Mr Lees, Tynninghame; Mr Knight, Floors Castle; Mr Baxter, Riccarton, and others, showed fine collections. Pines were well represented from The Glen by Mr M'Kay, and by Mr Greg, gardener to Mr Christie, Craigend. The only Grapes which were in fine condition were black and white Lady Downes. Vegetables were above the average both in quantity and quality: the forced ones were especially fine. Cucumbers were well shown by Mr Greg, and by Mr Hannah, gardener to Mr Duncan, Burnhead.

Our space compels us to omit a formal list of the prizes, and we feel that in noticing some productions we do injustice in leaving many equally meritorious unnoticed; but we cannot help it,—there is a limit to the space at our disposal.

REVIEWS.

ALPINE FLOWERS FOR ENGLISH GARDENS. By William Robinson, F.L.S., author of 'The Parks, Promenades, and Gardens of Paris,' &c. London: John Murray.

In a handsome book of some 360 pages, abounding with many illustrations and much pleasant reading, Mr Robinson gives us a valuable work on Alpine flowers. Such a book was greatly needed, and it appears at an opportune time, just when so many of the lovely flowers, of which the book treats, are surely rising into a

most deserved popularity. One thing is quite certain, that in the future of popular gardening, Alpine flowers will play an important part, to the great advantage of practical horticulture.

This is the best book Mr Robinson has yet written, and we welcome it as a standard work on Alpine flowers. It is divided into two parts, the first of which treats, in the first place, of the culture of Alpine flowers in the rock-garden, in beds, and in pots; and, in the second place, of a "Little Tour in the Alps," made by Mr Robinson in search of information respecting the flowers of which he writes. The practical cultivator will derive many valuable hints from the first, while the general reader, as well as the practical horticulturist, will thoroughly enjoy the second. The second part is occupied with descriptions of a large number of species and varieties of Alpine flowers, many of them written in a very pleasant manner, and rarely descending to the ordinary level of any details in which such descriptive notes are usually written. Such is a bare outline of the work, which is supplemented by descriptive lists of Alpine and Rock plants, &c., and a copious index.

In a well-written introduction of ten pages, Mr Robinson puts in an eloquent plea for a better appreciation, and a more extended culture, of Alpine flowers. The author asks, "What are Alpine plants? The word Alpine is here used in an arbitrary sense to define the vegetation that grows naturally on the most elevated regions of the earth—on all very high mountain-chains, whether they spring from hot tropical plains or green northern pastures. Above the cultivated land these flowers begin to occur on the fringes of the stately woods; they are seen in multitudes in the vast and delightful pastures with which many great mountain-chains are robed, enamelling their soft verdure with innumerable dyes, and where neither grass nor loose herbage can exist—where feeble world-heat and world-force are quenched and discomfited on their own ground by mightier powers—where mountains are crumbled into ghastly slopes of shattered rock by contending throbbings of heat and cold, and where the very water becomes hard and relentless as stone, yet bears and moves thousands of tons of rock as easily as the Gulf Stream carries a seed—even there they modestly, but brilliantly and bravely, spring from Nature's ruined battle-ground, as if the mother of earth-life had sent up her sweetest and loveliest children to plead with the fell spirits of destruction."

"Alpine plants fringe the vast fields of snow and ice of the high hills, and at great elevations have often scarcely time to flower and ripen a few seeds before they are again imbedded; while sometimes, if the previous year's snow has been very heavy, and the present year's sun is weak, numbers of these may remain beneath the surface for more than a year. Enormous areas of ground, inhabited by Alpine plants, are every year covered by a deep bed of snow. Where the tall tree or shrub cannot exist from the intense cold, a deep soft mass of downy snow settles upon these minute plants, like a great cloud-borne quilt, under which they rest untortured by the alternation of frost and biting wind, with moist, balmy, and spring-like days."

And it is about these flowers, flourishing amid such apparently inhospitable influences, that the author discourses, with a genial regard for them; and this self-same regard he infuses into his readers, as they follow him along the pleasant pages of his book. We hope, ere long, to return to the book, and give some passages from it, together with some of the illustrations so profusely dotted about it.

BOOKS RECEIVED.

GARDENER'S MAGAZINE for April, in which we notice that the editor is some capital papers on "Garden Ivies; or, A study of Hedera," which, on to being ably written, are also well illustrated.

the **FOOD JOURNAL** for April, a valuable magazine, treating of social and economy, and which is also a monthly record of food and public health. Pages of this magazine, all adulterations are mercilessly exposed with much and courage; and the several papers are of a very interesting character.

parts 7 and 8 of vol. xi. of the **JOURNAL OF THE ROYAL HORTICULTURAL** with extracts from the proceedings of the same, and miscellaneous



NOTES AND QUERIES.

have again to regret the postponement of several communications.—Eds.]

ING TROPÆOLUMS (M. PORTER).—Your seedling Tropæolums, of the Lob-section, are very pretty indeed, and show a marked advance, both in h of colour and size and form of the flowers, usually seen in this class. Means bid them out, and let us see them when they are in full bloom. not do better than get T. Lobbianum, Crystal Palace, Perfection, and to test your seedlings by, or any other good bedding kind. What we a *real* advance, not a mere supposititious one. Flower-gardeners are aware of the value of the Tropæolum as a bedding plant, or they would much more frequently.

SED PELARGONIUM LEAVES.—Will you kindly inform me what is the and how to remedy, a misfortune that happens to my Pelargoniums—and others? The lower leaves of the plants wither around the edges and spotted like the enclosed. The greenhouse has a sheltered position, face-outh-west, 22 feet by 12, and is heated by a flue. If any of your corres- would kindly communicate with me by post upon the matter, I should o pay expenses, and should feel much indebted. This is going on rapidly y show plants are suffering most severely.—Yours faithfully,

REV. G. SYDENHAM.

ALL COURT GRAMMAR-SCHOOL,
CANNOCK.

submitted the diseased leaf sent to an eminent authority in such matters, as thus reported on it:—"The affection on your Pelargonium leaves is very on a variety of plants. I believe it arises, under certain conditions, from water resting on plants when weak. The effect of drops of water on the Pelargoniums, in destroying the delicate tissues, may be seen in our cones almost every day." Possibly our correspondent will be ready to in- But if so, would *all* the plants in a house be so affected?" Certainly a t question. An affection similar to that complained of appears to be very, t almost say unusually, prevalent this season. A day or two ago, we out to a successful and honoured cultivator of the Pelargonium the s of this affection, and asked if he could recommend a cure. He stated that the best and most effectual cure was to throw the plants under the bench. We do not grudge our correspondent what crumbs of comfort he

may be able to glean from these two opinions, and hope some of our correspondents will be induced to express their views on the matter.—Eds.]

SPIREA PALMATA.—This fine red-flowering hardy herbaceous species scarcely be too highly commended. It forms one of the many valuable introductions from Japan made by Mr Robert Fortune; and though it had been described by Thunberg in his work entitled 'Flora Japonica' many years ago, had never been seen in flower in this country till exhibited by Mr Noble some months ago. It grows from 3 to 4 feet in height, and produces its fine-coloured heads of flower quite freely. For the herbaceous border it will be invaluable and should be in every such collection.

NAMES OF FLOWERS (A LADY READER).—1. *Bulbocodium vernum*; 2. *Anemone Appenina*; 3. *Saxifraga oppositifolia alba*; 4. *Scilla Siberica*.

DOUBLE WHITE HEPATICA (C. E. S. Baidon).—We never saw or heard of a double white Hepatica. The single white variety is by no means plentiful. Hepaticas can be produced from seed, as we saw some seedling plants of the single white variety at Mr P. J. Perry's nursery at Banbury not long since. It is said the Hepatica seeds very sparingly indeed.

A PLEA FOR THE MULBERRY.—This venerable plant found its way to this country at a very early date; and somehow, I fear, it is more or less neglected, as we do not see it take that prominent position which I consider it justly entitled to. Nowadays our plants are too eagerly sought after, before much is known of their merits. I frankly own that our gardens are much ornamented by the introduction of new plants, such as the *Pinus*, *Cupressus*, Cedars, *Araucarias*, the *Cryptomeria*, &c., and other hardy trees; but I see no reason why a Mulberry tree should not be planted on our lawns. Among all deciduous trees, none of them excel it in point of beauty. I speak particularly of it as more suitable for villa residences than large mansions. When soil and climate are favourable, the dessert-table is enriched with its wholesome fruit; and the lady or gentleman who takes an interest in silkworms, derives a source of pleasure from having an ample supply of leaves to feed their favourite insects upon. I hope my advocacy of growing the Mulberry tree, as an ornamental feature in villa gardens, will meet with a favourable consideration. The red kind is the most free in producing fruit, though the white variety is as handsome in appearance.—S.

A SUBSCRIBER, L.—We do not think the Trentham Black a suitable Vine for an early vinery, nor the Bowood Muscat. We prefer the Common Muscat of Alexandria to the latter, and Madersfield Court Black to the former. You can inarch them with ease. The others you have will do very well. The list for your late house will do very well, except that we would advise you to plant one Old Acre's West St Peter's, a very nice Grape, which comes into use when the Hamburgs fail, and before Lady Downes has got up its full flavour. We notice what you say about the failure of the White Lady Downes before the Fruit Committee; it was roughly used on the railway evidently, for it seems it was brown in colour; you must use your own discretion whether you plant it or not. On Easter Sunday we shall place a dish of it, and one of Black Lady Downes, on our employer's table; and if you can procure another white variety that will enable you to do this, plant it instead. We have two Vines of Mrs Pince's Muscat, and do not intend to increase our stock. We cannot advise you to plant it where you have Black Lady Downes.

R. P. BROTHERSTON.—The probability is, that the seed you have procured

the *Lessianthus Russelliana* is too old. It, however, may yet vegetate. Cover the top of the pot with a sheet of glass, and keep it in a moist stove or dung-frame. The compost you have used is perfectly suitable. When the plants come up, inure them to light and air gradually. Let them grow in the seed-pot till they have four leaves, then prick them off into a pan, in compost of equal parts light-yellow loam, peat, leaf-mould, and silver-sand, and shade for a time, paying attention to watering. When they are, say, such plants as a shilling will just cover, pot them singly in 60's, keep them still in a warm frame, then into 48's, and harden them off by degrees, till in September they can be placed on a dry shelf in the greenhouse, where they may stand till March. See that their foliage never gets wet, else they will drop off at the neck. In March, place them in a dung-frame with mild genial heat. When they start into growth, both above and below ground, shift them, still in the same compost; and when fit shift again, till they are in 8 or 9 inch pots, where they should flower well in a stove. By such treatment we have, thirty years ago, grown plants with 300 blooms on them, and as freely as Balsams. There is no plant more deserving of cultivation, yet it is nearly out of cultivation.

A NEW SUBSCRIBER.—Calendars of forcing operations have been so hackneyed that we gave them up; but, to meet your views and some others, we will entertain the idea of beginning another year with one of a very complete and comprehensive character.

CAMELLIA BUDS DROPPING.—In giving a reply to a correspondent under this heading, in page 143 of our March number, we alluded to the condition of some Camellias we had seen "in the greenhouse of an amateur cultivator of plants in the neighbourhood of London." This gentleman, who does not desire that his name should be given, has written to us relative to his mode of managing his Camellias, and we think what he has stated worthy of being published. He writes:—"I see in the 'Gardener' you have spoken of my success in the culture of the Camellia, but as what you there state is only half the secret, I will tell you also the remainder. It must be obvious to all who ever potted a Camellia, that it is not a plant requiring a large amount of nutritious matter at the root, as in nine cases out of ten it is apt to get quite soddened at the lower portion of the ball of earth; or, in other words, the plant has had given to it more than it is able to digest, for this is really what it amounts to. If a Fuchsia were potted in a similar way, the whole of the under portion of the soil would become a mass of roots, and evidently thoroughly digest the soil, if such a term may be used. The Camellia has, comparatively, very few roots, and they never attain any great length, though they delight in getting into the drainage below, thus showing that it prefers a loose open soil to grow in, otherwise the roots would remain in the soil above. The fact is, the roots are of such a nature that they were not formed to penetrate a soddened mass of earth, and, indeed, are not capable of doing so. The soil best suited to the Camellia is a peaty loam, or a loamy peat, whichever you please—the former such as is obtained from Epping Forest; the latter from some place near Twickenham. The turf, or peat, should be cut 3 inches in thickness, and when cut should, as soon as possible, be subjected to a partial charring, as recommended for the vine-border. The turf should not be broken small, but be used in as large pieces as possible. If old peat or loam is used, it should be kept open by means of small pieces of charcoal, and the same should be used as drainage, which will tend to give the beautiful dark foliage so much and deservedly admired. My house is not suitable for the Camellia. A house most advantageous to the growth of this plant is one facing north, as the

glowing sun is, of all things, most injurious, especially when the new wood forming, causing blistering, &c. The system adopted by the Italians is the most sensible. They grow in pits facing north; put the pots in a broad bottom, and fill up around the pots nearly to the top with some light material, such as coconut fibre, &c., and only water overhead occasionally. I could write much, but have said enough to show the principle of growing Camellias."

LUPINUS CALIFORNICUS.—In your February number I see that *Lupinus Californicus* was introduced to your notice. I am inclined to think that it is really *L. arboreus*. It is quite hardy—not half-hardy, as some botanical works describe it to be. If it is *L. Arboreus*, I cannot understand how a gentleman like the late Mr Mangles, with such extensive knowledge of plants, should have described it to be *L. Californicus*. He sent it to me as a new variety. I am like Mr A. Pettigrew, surprised that it has been so long in the country, and yet so little known. I think the colour is more of a primrose than a buff, and I think part of the corolla is of an orange yellow. It merits the description Mr Pettigrew has given it, and it is worthy of a place in every garden. I see at this time hundreds of seedlings are coming up under my old plants, which shows how hardy it is even in their young state of growth.—R. DRAPER, Seaham, Sunderland.

HINTS ON POTTING PLANTS.—Nothing can be more opportune, or more useful to amateur cultivators of plants, than some suggestions in relation to this very important topic. In potting plants that require any cutting or pruning, the two operations should not be performed at the same time, generally; it is best to prune first, and allow the plant to make fresh growth before the potting is performed. Deciduous plants should never be repotted till they have burst into leaf; Fuchsias, for instance, which have been dried off in winter, should in no case be shaken out of their old soil till they have expanded a few leaves, and any pruning required in their case should be done before the roots are disturbed. Evergreen greenhouse plants—such as Camellias, Oranges, and Myrtles—have a particular season at which the roots elongate or increase with more rapidity than is usual at other stages of their growth; and, under ordinary circumstances, this season is immediately when they have made their growth in branches and leaves, and it is the most desirable time to shift such as require it into larger pots and more nourishing soil, just as the roots are extending, and ready to take hold of fresh soil.

Shifting a plant into a larger pot often becomes necessary when pruning is not called for. When it is desired to increase the size of a plant, it should be shifted into a larger pot as soon as the roots have circled themselves among and around the soil in their present pot to an extent that renders it safe to perform the operation without danger of the ball falling to pieces. Generally speaking, a sure criterion as to when a plant requires more pot room and nourishment, is when the roots make their appearance through the bottom of the pot. It is, however, much preferable at the near approach of winter to leave plants a little cramped at the roots, than to shift them on at such a season: under such circumstances the operation should be deferred till early spring. Azaleas and Camellias should not be shifted till after their blooming season is past and they have made fresh growth; and the exact season for potting such plants must, of course, be determined by the time at which they are forced to or retarded from making their growth.

Pots should always be scrupulously clean and quite dry when used. If they have been previously used, they should always be washed before putting another

plant into them ; every particle of mould or slimy matter which adheres to them and clogs up the pores should be removed, both outside and inside. When a plant is potted into a pot the inside of which is covered with particles of earth, the mischievous consequence, to say nothing of others, is that, in turning a plant out of it, the ball is sure to be broken, and, of course, the roots also injured.

THE PHOENIX PARK.—By the demise of the late lamented Mr Wilkie, the responsible post of head bailiff of the Park recently fell to the disposal of the authorities. It affords us no small pleasure to-day to be able to inform our readers, more especially those of them who take a practical interest in the Park and its future, that the authorities have exercised the trust placed in their hands in a way that does credit alike to their impartiality and their practical discrimination. As is always the case when there is a thing of the kind to give away, the number who suddenly become conscious of their practical knowledge and fitness for the post was quite marvellous. We understand the number of applicants was exceedingly numerous, the claims and fitness of the vast majority to fill the post being doubtless of the most imaginative or shadowy character. Military men suddenly found they could as fitly direct the operations of the pruning-hook as of the sword, and civilians, to whom gardening and woodcraft were hitherto myths, and a tree a tree, but certainly “nothing more,” quickly became gifted with much knowledge of the two first, and quite a rare appreciation of the beauty and value of the latter.

“Than a tree,
A grander child earth bears not.”

Well, however, notwithstanding the personal convictions of so many of the fitness of the post for them, and no doubt high character and much influence, a practical man eminently qualified for the post, Mr Charles M'Donald, so long and favourably known in connection with Colonel Tighe's magnificent residence, Co. Kilkenny, has been selected to fill it.

Than Mr M'Donald we do not think a better selection could be made. Thoroughly practical and experienced as a horticulturist, absolutely enthusiastic in his love of trees, and as regards the advancement of arboriculture, and at the same time possessing a refined and cultivated taste, he is the right man in the right place. We congratulate Mr M'Donald most sincerely on his well-deserved promotion, and those who, waiving other considerations, gave to those of practical fitness the weight they should always have in appointments of the kind. We have no doubt that all who may be brought into contact with Mr M'Donald will find him, as we have ever found him, most kind, courteous, and obliging. We do not know at all whether they come within his sphere of action, but somehow or other we have hopes from his appointment that, as well as in the Park, “arboriculture in the garrison” will look up, and the “poor trees” in the Military Esplanade be no longer its opprobrium.

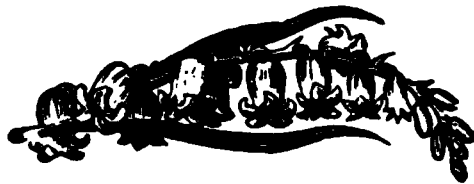
We are also gratified to learn that Mr M'Donald is to be succeeded at Woodstock by Mr M. Matheson, who has been for many years gardener to the Marquess of Exeter, and who, we believe, is one of the ablest gardeners at present in England.—*Irish Farmers' Gazette.*

[We cordially endorse every word of the above in regard to our old friend and correspondent Mr M'Donald. All who have visited Woodstock Park have had ample proof of Mr M'Donald's genius, for what he has done there entitles him to credit for this quality in no small degree ; he stepped boldly beyond his profession

as a gardener, and added that of architect, and the results prove that he had overestimated his ability. The winter terrace-garden at Woodstock is the most unique thing of the sort in the three kingdoms, and is entirely the work of his friend, both in design and execution. Its massive architectural walls, sculptured granite vases and urns, would do credit to our best architects. The rockwork, Conifers, especially the Araucarias, and many other striking features of the place he leaves, will bear lasting testimony to his enthusiasm as a landscape gardener, as well as to the munificence of his employers.]

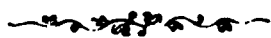
TESTIMONIAL TO MR METHVEN, NURSERYMAN, EDINBURGH.—A number of Mr Methven's friends connected with horticulture and arboriculture in various parts of the country, took the opportunity of their being in Edinburgh at the spring exhibition of the Royal Caledonian Horticultural Society, of presenting him with a very handsome wrought silver epergne and massive salver, bearing the following inscription—"Presented to Mr Thomas Methven, Nurseryman, Edinburgh, March 29, 1870, by a few of his Horticultural and Arboricultural friends, as a token of their esteem for him personally, and of the sense they entertain of the many services he has rendered to cultural science." The presentation took place in the Café Royal, in the presence of about forty of the subscribers. The meeting was characterised by a cordiality which must have been very gratifying to Mr Methven.

ESSAYS ON WINDOW AND COTTAGE GARDENING. — The prizes offered by Mr W. Egerton Hubbard, jun., through the medium of the Royal Horticultural Society, have been awarded as follows—viz., For an Essay on Cottage Gardening, the prize of £5 to Mr E. W. Badger, Midland Counties Herald, Birmingham. For an Essay on Window-Gardening, the prize of £3 to Mr H. Battery, Clapham. For the former prize thirty-four Essays were sent in, of which number those from Mr W. Payres, Nottingham, and Mr E. Luckhurst, Egerton House Gardens, Kent, were highly commended: and those from Mr D. F. Fish, Hardwicke House, Bury St Edmunds; Mr A. Meikle, Read Hall, Whalley; Mr P. Grieve, Culford; and Mr W. Early, Dingswell, were severally commended. For the Window-Gardening prize, eighteen Essays were contributed, that from Mr D. F. Fish being highly commended; and those from Mr E. Luckhurst, Egerton House Gardens; Mr A. Meikle, Read Hall; and Mr W. Moss, Shelfield, Wickham, Hants, were commended. In several of the other cases under both heads, good practical papers were sent in.



THE GARDENER.

JUNE 1870.



A BEQUEST OF SPRING.



HERE is lying before us as we sit down to write a bunch of flowers plucked from trees growing in the Chiswick Gardens of the Royal Horticultural Society. Each one of them has its pleasant tale of high floral service to earse, as

“Nature, rejoicing, shows an aspect fair,”

spring

“Heaps up her gifts in happy plenteousness.”

us take them singly, and note their qualities and appearance. re is a species of *Pyrus malus*, known as *floribundus*, the very gem our group, and a most noteworthy hardy-flowering shrub. Along a branch is seen a row of glittering red buds, hanging like lines of pting cherries, which, as they expand, take the form of large deep-sh-coloured flowers. This *Pyrus* is a thing of beauty that should rn every shrubbery, and be in every group where flowering trees seen to alternate with the quiet beauty of green leaves. Our sprig gathered from a spreading plant some 4 feet in height, and at stage of growth it was profusely covered with flowers. *P. malus* :tabilis, or the double-blossoming Apple, is another, plucked from age tree, every branch of which was lit up with a charming sheen adiant pink flowers of large size—a grand tree for woodland ways, re it can be looked on with a dark background of -budding s. Here, too, is the large double-blossomed Cherry of the Big- au type, taken from a fine tree, each branch of the spreading d having the under part thickly hung with large snow-white blos- as, each facing downwards, as if desirous of turning the full face of

its pure and chaste flowers to greet the eye of the beholder beneath. Is this a double-flowering form of *Cerasus Japonica*? and who wonder that it is such a great favourite with the ladies? for they eagerly bestir themselves for a cluster of its snowy blossoms. There appear to be two types of double-flowering Cherries, the one after the model of the *Bigarrea*, the other after that of the *Morello*, the former yielding the largest and showiest flowers.

Next comes a group of four forms of the *Prunus*, comprising the white and rose-coloured double forms of *P. Sinensis*, both early blooming, very free, and very attractive indeed in shrubberies. Here is the curious *Prunus triloba* also, with its large and showy pink blossoms and singular fruits, each one a cluster of several, all grown into one—a curious botanical phenomenon. This, too, is an extremely effective flowering plant; besides, all three are well adapted for early forcing, and should be laid hold of for conservatory decoration in early spring. By the side of these lies a sprig of *P. Serotina*, taken from a large tree, with spreading branches overhead, sheeted in white; a tree for parks and pleasure-grounds, as well as for small villa-gardens, that produces in a most luxuriant manner racemes of white flowers: even the young branches growing from the trunk amid the Laurels that surround its base furnish their quota of flowers, though half-hidden from view. Whitest of all, perhaps most profusely floriferous, is that gem among white-flowering hardy shrubs, *Spirea prunifolia flore pleno*, the double-white plum-leaved *Spirea*. Flowers of spotless white fringe half-pendent branches, and bring out by force of marked contrast the wreath of orange-coloured blossoms of the bright-looking *Berberis Darwinii* lying by its side. Here, too, is *Viburnum plicatum*, just coming into flower, but as yet only in the first degree of its floral service.

And, lastly, here lie side by side the remains of three varieties of double-flowering Peaches, that lingered on the trees as if waiting the advent of the warm late spring showers, and to catch the far footsteps of the coming rain. They are the white, the crimson, and the carnation-striped, the flowers white with lines of pink. Exquisite even in decay, what must they have been in the full flush of their highest beauty? What glorious subjects for forcing!

The rehearsal is done—the last of our floral actors are laid aside. If we have but quickened into an active regard for some of these spring-blooming shrubs the hearts of a few of our readers, our bunch of flowers will not have been passed in review altogether in vain.



NOTES OF THE MONTH.

Among the last acts of service done to floriculture by the late Mr. Samuel Broome, of Chrysanthemum renown—perhaps the last act—that of entering a protest against the severely formal manner in which the specimen plants of Chrysanthemums were trained at the autumn show of the Liverpool Horticultural Society. The schedule for prizes to be given at a corresponding exhibition in the present year is usually a liberal one—has just been issued, and with it a letter written last December by Mr. Broome, containing the following passage: “Will you be so good as to call the attention of the Chrysanthemum-growers to an excess of training that I observed in some of their plants? they were too large, and too flatly trained. The centre of the plant ought to be from 9 inches to 1 foot higher than the outside, and the blooms should not be tied down after the bud is of the size of a small Pea. By tying them so late, the stem of the flower is not strong enough to support the bloom erect, and the beauty of the flower is lost, as it is buried in the foliage. I have one more remark to make; viz., there are too many white and yellow varieties; try next year a few more dark colours.” A piece of well-timed counsel: let us hope it will be acted upon at the next exhibition.

It is time also that a firm and decided stand were taken against that system of flat training on wire frames, followed in the case of the Zonal Pelargonium. Of the two, it is perhaps more offensive to good taste than in the case of the Chrysanthemum, as the habit of the latter plant is but ill adapted for exhibition on the raised stages usually met at such shows, unless the growth be somewhat reduced by training. This system of flat training in the case of the Zonal Pelargonium assumed one of the worst forms in which it was ever seen, at the meeting of the Royal Horticultural Society at South Kensington, on the 18th of May. Six plants, forming a collection, were shown trained flat on wire trellises about 4½ feet across; and the plants—by no means well furnished either with branches or flowers—were the most inelegant things in that way ever looked upon. They were so flat in shape, that, had the plants been severed from the roots just at the surface of the soil, each one could have been trundled along the walks of the Garden at South Kensington with nearly as much ease as a child's top. It is lamentable that judges can be found at a London exhibition willing to award first prizes to such floral monstrosities—something unlike plants, in the natural freedom and elegance of their growth, could well be imagined; plants too, that were both indifferently grown and flowered. When there shall arise judges who will have the courage to mark with strong disapproval, by withholding all prizes from

them, such merely artificial modes of exhibiting plants, then, and till then, will wire trellises become a thing of the past: the sooner does, the better for legitimate exhibiting.

Apropos of floral exhibitions, it may be stated that a society is in course of formation having for its object the encouragement of florists' flowers. Those who are engaged in forming the society intimate that their first object would be to revive the once popular autumn exhibition of Dahlias, Verbenas, Gladiolus, Hollyhocks, &c., at the Crystal Palace; and also to endeavour to bring forward, from their comparative obscurity, many of those flowers that were once grown for exhibition to a great extent, but which are now sadly neglected; such things as the Auricula, Polyanthus, Pansy, Cineraria, &c., would no doubt receive special encouragement. The contributors to the fund now being raised to hold an autumn show at the Crystal Palace comprise many of the leading nurserymen and amateur cultivators of the day; and it is stated that the directors of the Crystal Palace are prepared to meet the new society in the most liberal manner. The Rev. H. H. Dombrain, Westwell Vicarage, Ashford, is in the mean time acting as secretary to the embryo society, and to him all communications should be addressed.

While this praiseworthy effort is being made to restore to popular favour some of the gems in the lists of florists' flowers, there is also being carried on in the pages of a contemporary a lively discussion under the general head of Flowers and Flower-shows. Mr William Paul, of Waltham Cross, who has retired from active participation in the work of exhibiting, has boldly avowed his conviction that the asserted decline of flower-shows is, to a great extent, attributable to the fact that many of the leading flowers, such as the Dahlia, Hyacinth, Pelargonium, Rose, &c. are subjected to such an amount of dressing and handling as to altogether mislead the public; and the public, who are the popular patrons of horticulture, are becoming aware of this, and, disliking the partly artificial aspect many of these things present, are withdrawing their patronage from the shows in consequence. This is a pretty fair representation of Mr Paul's argument, and it indicates the line of attack he has followed. "Dressing," states Mr Paul, "is now carried further than ever, and the Dahlia is made up of two or more flowers, and dressed with all the skill of an accomplished milliner;" instancing the case of Pelargonium flowers made up of several petals gummed together, and so on. Such statements as these practically assert that the dishonest exhibitor is not the thing of the past we had fervently hoped he was, but that he is more active than ever in our midst, duping the judges and public alike, and chuckling over his ill-gotten gains. But, in all soberness, is such a

horticultural monster as this aught else but the outcome of the imagination of an exhibition monomaniac? Mr Paul writes like a man soured by disappointment of some character, which has tintured the sober judgment of his mature years; and so he flings forth utterances of floral misanthropy very painful to many of his old friends and associates in the work of exhibiting, who still hold him in high esteem both as a florist and a man.

In the charges thus brought against exhibitors in general, and indirectly against the judges at exhibitions as conniving at such acts, Mr Paul should not forget that invariably, when any resort has been made to these practices, it has resulted in detection. During the last year of the existence of the National Floricultural Society, of which Mr W. Paul was a member to its dissolution, an instance occurred of a seedling Dahlia being submitted to the judgment of the censors at one of the meetings of the Society, which had had its centre taken out and that of another flower substituted for it. The culprit was instantly expelled the Society, as a means by which the members could best express their abhorrence of such a deliberate intention to deceive. When the dishonest exhibitor and the venal judge come into power at our exhibitions, there will be reason to fear such practices may prevail; at present we have a higher opinion both of exhibitors and judges, notwithstanding what is stated by Mr Paul to the contrary.

From New York comes the intelligence of a new process for preserving timber, which has been tried with much success. We extract the following passage from 'Chambers's Journal': "There is, in all green wood, an amount of putrescible matter combined with the sap. If this can be got rid of, the timber will keep sound; and it is got rid of by soaking the timber in a solution of borax, and washing afterwards in plain water. Borax has an advantage over some other chemical substances used in the seasoning of timber; it does not attack or weaken the woody fibre, or the structural tissues, or cellular membranes, however delicate. This being the case, may we not suppose that by treating different kinds of wood with borax, a delicate appearance would be imparted, which would render them valuable for ornamental purposes?"

The exigencies of railway communication in the metropolitan district has necessitated the closing of the Versailles Nursery, Hammer-smith, occupied by Messrs Salter & Son, and the stock has been sold off preparatory to the property passing into the hands of the railway company. We hear Messrs Salter & Son do not intend to resume business, and their new Chrysanthemums will be distributed by Mr William Bull. We are very sorry indeed to lose the pleasant winter-garden in this nursery during the months of November and

December, and hope some one else will make an effort to afford a similar treat to the admirers of the Chrysanthemum at the end of the season of the year.



COVENT GARDEN MARKET IN THE MIDDLE OF APRIL

DR HOGG deserves our gratitude for his admirable Directory ; it makes even the stay-at-home gardener better acquainted with his brethren and the whereabouts of gardens. We never take a long journey without a Directory in our pocket, if sight-seeing is our object. We lately slipped our moorings and cleared for London with a Directory and 'Bradshaw,' which were our only studies by the way ; drier reading, perhaps, than 'Johnson's Dictionary,' but suggestive of plenty of matter for thought nevertheless. For instance, coming to Newark, the Directory says this is the post-town for Cauntoun Manor ; we stretch our neck and look out of the carriage window to see if we can guess where it can possibly lie—where the Queen of Flowers holds her courts ; we think of her great field-marshal, and his many battles won. There is one garden which Dr Hogg has forgotten to mention in the Directory, which is always deserving of a visit, however often it may have been seen before ; we mean Covent Garden, London's garden-market, though once on a time a real garden. There will be seen whatever of garden produce it is possible for skill to send or money bring into the market ; and there the practical man can take notes of what he ought to have or might have at home.

The one thing most striking in Covent Garden market on the second week of April was the Oranges. The eye rested on them everywhere, the whole place smelt of them, and everybody must have been tasting them ; we did, at three for twopence. It is the same all over London—West End and Mile End, north and south, heaps of Oranges in carts, barrows, baskets, and windows. In the Garden also were Blood Oranges, with their dark-red cheeks and blood-streaked flesh—small Tangerine Oranges, Seville Oranges for marmalade, Lemons, Citrons, Shadocks as big as bladders of lard, and other fruit of the genus Citrus, dubbed Forbidden Fruit ; but *en* might be spelt *ing* without being a misnomer.

Do my readers know whence come those huge quantities of Oranges?—from Spain, of course, or from St Michaels, or Malta. Well, we shan't go there to see but come down to the wharves, a little below London Bridge, and we shall see five or six large steamers, clean and bright and freshly painted, each with three large hatches open, through which one can see the holds closely packed with shallow fragile boxes, each box tied round with a plaited, green, rushy-looking rope. The boxes are swung on deck, the rope cut away by a man with a large knife, who then proceeds to break open the box with a tool-axe and hammer combined. He plunges his hand down among the Oranges at each end of the box to see if he can find something which he should not find, nails up the box again, which is then transferred to the back of a man who has a bevelled pad on his shoulders with a hole in it for his head, and off he marches over planks, decks, and up a ladder 20 feet to the wharf, where he receives a piece of round tin with a hole in it from a man who is standing for the purpose. The men, each with his load of one box, follow each other in line like wild geese along the wharves, up dark alleys, and into fusty-smelling warehouses, from whence dealers are supplied in town and country. Pears were very scarce in Covent Garden, yet some very fine Easter Beurrés are

to be seen, thus doing credit to their name, which is too seldom the case with that variety grown in the north of England. Wretched foreign Pines, plentiful enough; English Queens, small and badly swelled; Smooth Cayennes put in a good appearance; Lady Downes Grapes, which seemed, however, the last wreck of bunches gathered together in baskets to keep each other in countenance. Alas for the foreign Grapes! No wonder the West-Enders cannot eat them; to witness the resurrection of those bunches out of barrels of sawdust, and the clipping and blowing and sputtering necessary to make them presentable, is enough to cure any appetite for foreign Grapes. Fortunately, our foreign *bonne bouche*, the Orange, has to be divested of its skin before being eaten; not so the Grape. For this very reason alone, the foreign Grape, unlike any other imported fruit, cannot become a favourite with the wealthy. Home-grown Grapes must always hold their own place. Apples consist of nice little Russets at six for 1s.; Keen's seedling Strawberries, not large, at 1s. per oz.

What do our northern friends think is the staple vegetable at present in the London market? why, Turnip-tops, said to be very nice; but the craving for Greens at this spring-time must be strong to induce so large a consumption: they are heaped up at the stalls in cart-loads, wizened and smoky, especially at the east end. Fine white heads of Broccoli come more prominently forward westward: nice firm heads, the size of a man's fist, can be bought for 3d. in Whitechapel; further west, the quality and price increase, and yet are plentiful. The leaves are cut off round by the margin of the flower, which, although objectionable from exposing it to dirt, yet makes the flower show itself better. Fine Kidney Beans are to be had by those who like to pay for them. Mushrooms, French, plentiful and cheap. Peas, to judge from their bruises, have come from far; ditto Globe Artichokes at 6d. each. Long Surrey Carrots, as usual, are fine, clean, and tempting, tied in bunches, with a few Birch or Hazel twigs among the tops to keep them together. On asking a dealer where these fine Carrots were grown, he could not tell, but thought they came across London Bridge: many more good things come out of that quarter as well Oranges and Carrots, we soliloquised. Punnets of Seakale of six or eight heads, laid side by side on moss in round chip baskets. Salads are on the whole abundant; long young Cucumbers, Turnip Radishes, Mustard and Cress, green and brown Water *Creases*, forced Chicory, Endives beautifully green on the outside, inside fine creamy white, crisp and firm, the perfection of an Endive—Cos Lettuces, shall we call them French? we did not inquire. Here let us throw in our evidence in favour of the cloche or bell-glass; we have satisfied ourselves that with its use French Salads can be grown in England, and we shall pay no attention to any assertion to the contrary in future; but we must have these "blisters" of glass at a payable rate. Woe betide the teeth which chew those sticks of Asparagus, white to the tips, stringy as whalebone, a foot long and thick as a man's thumb! They are just the thing to feed the first live gorilla which comes to the Zoological Gardens. M. Du Chaillu tells us that Mr Gorilla feeds on the ribs of the leaves of the Pine-Apple, which are tough enough, although a specimen in the British Museum is absorbed in contemplation of a ripe fruit made of gilt plaster, as if he preferred it to the leaves.

The trade in cut-flowers and flowering-plants does not seem pushed to the same extent as it is in Paris. There is no flower-market in London to compare with that at the Madeleine, or what we have seen at the bridge near Nôtre Dame. Covent Garden, in its way, is the only place we know approaching either. The high prices asked would indicate that there was room for further supplies, or a more eligible and comeatable market is desirable, say near Hyde Park Corner or

St James's, if we be not ignorant of such a thing being already in existence [Aristocratic noses turn up contemptuously at such a thought ; besides, the provision of a site would be the great difficulty : after all, is a market in this locality really required ?—Eds.] Returning to Covent Garden, nowhere have we seen bouquets better made than here. A favourite style at present is a white *Camellia* for a centre (premising that all flowers are first fixed if necessary on artificial stalks with fine wire, sheaves of which, cut in lengths, lie beside the operator), then a ring of *Roses*, alternated with bunches of blue *Nemophila*, or *Gentian* for blue, fragile though the flowers be ; *Cinerarias* are also used for blue ; then come *Pelargoniums*, either scarlet or show varieties, such as the old forcing kinds — *Gauntlet* and *Boule de Len*, alternated with *Stephanotis* or *Deutzia* ; here and there moss *Rosebuds*, *Heaths*, *Lily of the Valley*, or *Epacris*, are sticking above the surface of the bouquet, *Adiantum cuneatum* being a favourite for green. *Dendrobium nobile* is also at present in use for bouquets, and will remain so for a month. Quantities of the common Northern Hard-Fern, *Blechnum boreale*, are largely used to fringe the commoner bouquets ; from whence it comes we do not know, perhaps from a heath or moor not far away, or it may be grown on purpose. The chief feature remarkable about most bouquets is a system of order in their arrangement suggesting how much beauty depends on form and symmetry, and how much natural grace is compatible with strict formality. Practically, when the operator knows exactly beforehand how he is to arrange his materials, he can turn those materials to the best account without waste.

Cyclamens are in splendid force ; *Hyemalis*, *Gracilis*, and *Ventricosa* *Heaths*, the latter exquisite for furnishing. *Spiraea* (*Hoteia*) *Japonica*, of all plants for forcing, this is one of the best ; its profuse white spikes of flower, rising above its fine fern-like foliage, make it an elegant plant for furnishing either drawing-room or conservatory. Standard *Roses*, 2 to 3 feet high, two years from the bud, with fine healthy foliage and half-a-dozen open flowers, in 6-inch pots ; dwarf *Roses* ditto, *John Hopper* being a favourite, and *Gloire de Dijon* also. *Hydrangeas*, with monstrous single heads, in 5-inch pots, are very early. *Mignonette* short and stubby in 5-inch pots, six to eight plants in a pot ; Double *Tournesol Tulips* ; white Queen-of-England-looking *Fuchsias*, masses of bloom, in 6-inch pots ; *Hyacinths* of every hue ; *Lily of the Valley*, *Pinks*, *Carnations*, *Cactuses*, *Calla Æthiopica*, *Dielytra*, &c. ; *Neapolitan Violets* in flower in 4-inch pots, at 1s. 6d. per pot ought to bring more of that saleable plant into the market. Much more could be said of what may be seen and learned in Covent Garden. I fear lest what already said be trite to many. Hosts of hardy herbaceous plants may be seen some with droll nondescript names attached ; *Ivy* in pots, for training about windows, down dark alleys, where nothing else will grow ; the commonest *Ferns* and weeds by the wayside may be bought ; *Groundsel* in barrow-loads for bird food.

While we were making some purchases at a leading stall, a person came forward asking for *Nettles* to buy, but could not be supplied with green, but could get dried. Another purchaser wanted the deadly *Nightshade*, and wished to know from which part of the plant the tincture was extracted : was informed, from any part. He looked like a paterfamilias, in high-polished boots. Did the villain want to experiment on his own family ?

THE SQUIRE'S GARDENER. —



NOTES ON HARDY HERBACEOUS PLANTS.

BERBERIDACEÆ.

THIS natural order of plants comprises only a very limited number of herbaceous genera, and none of these may be considered plants of showy character; for, unlike the majority of the shrubby species, they are more remarkable for their curious structure than for striking beauty. The most important herbaceous genus is *Epimedium*, for the purposes of ornamentation: in it there is a very happy union of grace in habit and foliage and beauty, as well as high interest in the flowers. *Jeffersonia* is perhaps the only other genus that may be admitted into collections other than botanical, and it should be in every collection of choice beautiful plants, being at once both curious and handsome. The culture of these two genera must be the same. They succeed best in sandy loam and peat of considerable depth, and all the better if moist, though perfect freedom from stagnation must be secured, and they prefer a little shade; but that is of less consequence than a properly-constituted soil. In the mixed border they form elegant objects for the front lines, and they are very fit also for rockwork, especially where the natural soil is unfit for them—that is, heavy loam or clay. Some of the *Epimediums*, being ever-green, are well adapted for furnishing the margins of beds of shrubs, their dwarf elegant mode of growth bringing about a very pleasing gradation from the shrubs to the ground edge, be it grass or box and gravel. Once established in stock, and while doing well, these plants should not be disturbed by annual deep diggings and transplantings; they dislike being much moved once they are established in a place; and only when they begin to decline, or when it may be necessary to increase stock, should they be moved. Division is the best mode of increasing these, and it is best done, especially in counties north of the Tweed, in early spring, just as activity begins to show itself returning. Of other herbaceous genera of this curious and interesting order—*Caulophyllum thalictroides*, with yellow and very fugaceous flowers, from N. America, and *Diphylleja cymosa*, with white flowers, also N. American, and in both which the leaves are produced twin-fashion—there is little seen even in botanical gardens in this country, and they are decidedly more curious than beautiful; fit subjects for botanical collections, in fact. They require the same conditions in culture as *Jeffersonia*, to which they are closely allied.

Epimedium.—This family contains three or four distinct and pretty species, some or all of which should be cultivated in every collection of hardy border plants. They are hardy elegant plants adapted to any purpose to which herbaceous plants may be turned.

E. alpinum, *Alpine E.*—This is one of the most elegant and interesting, though not the showiest, of the group. It grows in graceful rounded masses, a foot or more high, with elegant compound leaves on slender hard smooth stalks, with lively green heart-shaped leaflets, bronzed and rigidly ciliated on the margin. The flowers in long loose racemes spring from the leafstalks an inch or two below the primary divisions of the leaves, are small, reddish brown, with curious spurred yellow and rather conspicuous corollas.

E. macranthum, *large-flowered E.*—This is the finest of *Epimediums*, and a very handsome and interesting plant. It is less vigorous in growth than the last species, growing from 6 inches to 1 foot high, with leaves of the same structure and general form, but smaller, and usually bronzed and shining in the early stages of growth; the margins ciliated and the stalks slightly hairy. The flowers are white, tinted with purple, and the petals, about an inch long and four in number, are pure white, transparent, and are the most conspicuous feature in the flower. The flower-stalks carry the flowers slightly above the bronzy foliage, and the effect produced is charming. Flowers April and May. Native of Japan, but quite hardy.

E. pinnatum, *Pinnate E.*—This species grows about the same height as the large-flowered *E.*, with smaller leaflets supported on more slender stalks. The flowers, borne in rather dense racemes, are yellowish, and appear in April and May. The variety named *elegans* is the best, and is a very desirable plant for partially-shaded borders. Native of Persia.

E. violaceum, *Purplish E.*—The leaflets in this species are narrower in proportion to the breadth than in the last two species. The flowers are white, tinted with pale purple, and appear in April and May. By some this is regarded, and not without reason, as a variety of the large-flowered *E.*; the stature and habit in both forms are nearly the same, and in other respects they are not markedly distinct for the purposes of decoration. Native of Japan.

Jeffersonia diphylla, *Twin-leaved Jeffersonia.*—This, so far as I am aware, is the only species, and it is perhaps more remarkable as a curiosity than as an ornamental plant. It is not, however, deficient in beauty, the flowers being large, abundantly produced when well cultivated, though individually somewhat fugaceous. The flowers, as has been said, are large, about an inch across; white, with conspicuous yellow stamens, and the leaves are curiously produced in single pairs at the extremity of the stalks. It is a native of moist shady woods in N. America, and in cultivation is best adapted for culture in semi-shady places in deep rich peat and loam freely mixed with sand; under such circumstances it attains its greatest perfection, but I have

seen it very beautiful and interesting, but shortlived, in its display in the light sandy soil of the gardens at Kew, and in a southern aspect. It is a plant rarely seen in private gardens, and not always to be met with in botanical gardens in this country, but it is worthy a place in every garden, if the conditions necessary to its wellbeing can only be secured.

NYMPHÆACEÆ.

The members of this order are all aquatic or marsh plants. It is an order of the grandest interest and beauty. All the world has rung with the praise and fame of the regal Victoria, the noblest of Water-Lilies, and the sparkingly beautiful species and varieties of the tender Nymphæas are plants of the loveliest type. Although an attempt or two has been made, and attended with some success, to cultivate the Victoria in the open air in tanks of water artificially heated, we must not claim the wonderful plant as a hardy subject in this country; and it is scarcely possible, even though, for the purposes of sensation, it may appear desirable, to cram the representatives of the genera of every clime into the cramped limits of our little but glorious isle. Our efforts in making such a universal *omnium gatherum* of plants would be only less ridiculous and dangerous than the like on the part of the zoologists with animals. It would undoubtedly be sensational to have the lion or the tiger pricking up one's senses by a growl or a spring from the hedge by the wayside, but the beauty or the comfort of the thing would be questionable, at least to mortals of ordinary nerve. We have no need, however, to attempt naturalising the lions of the vegetation of the tropics, even though by artifice we could assure ourselves of success; there are plenty of the tamer, but not less beautiful, plants of temperate and northern climes, which, without either much trouble or expense, may be had for the various purposes that may be entertained in out-of-doors gardening in this country. Nuphar, scarcely less beautiful than Nymphæa, furnishes four or five hardy species of aquatics, and Nymphæa gives us about the same number, which may fairly vie with the most admired of the tropical species and varieties as seen in our stoves. These hardy Water-Lilies are very ornamental objects in lakes, ponds, and gently-running streams, and their culture is the most simple. They are easily propagated by division in spring as growth commences, the only care necessary being to secure the plants to the position they are to occupy by some kind of anchor till they take root and fix themselves, which they quickly do. Seeds also may be used as soon as they are ripe; or, if the seeds have to be transported a distance, they should be put in small bottles of water, and kept cool. They are usually sown by being cast into the water

where they are to grow, but a more certain way is to sow them **in** shallow pans or pots, and gently drop them into the water after they have been well wetted to prevent displacement of the seeds. The **only** care afterwards necessary is the prevention of injury by waterfowls **or** floods till the plants have made some growth, when they will care **for** themselves. No pricking off nor transplanting from the seed-pan **is** necessary in the method described; they quickly spread away from **it**, and root and extend freely in all directions.

Nuphar, Yellow Water-Lily.—In foliage and mode of growth **this** group does not differ essentially from the Nymphæas, but in the **struc-**ture of the flowers there is an easily-recognised distinction. **In** Nuphar, the parts of the flower—sepals, petals, stamens—are **closely** crowded on a raised fleshy disc surrounding the base of the seed-vessel, while in Nymphæa they are more loosely arranged, and spring **direct** from the base and sides of the seed-vessel itself. There is, moreover, so far as I know, no hardy yellow-flowered Nymphæa, whereas **all the** hardy cultivated Nuphars are yellow-flowered.

N. advena, Stranger Yellow Water-Lily.—The leaves are deeply heart-shaped, with widely-spreading lobes; the calyx is usually composed of six sepals. Flowers in July and August. Native of N. America.

N. Kalmiana, Canadian Yellow Water-Lily.—The leaves are deeply heart-shaped, with spreading lobes, and the calyx has usually only five sepals. Flowers in July and August. Native of Canada.

N. lutea, British Yellow Water-Lily.—Leaves larger than in either of the foregoing, deeply heart-shaped, with overlapping lobes. The calyx composed usually of five sepals. This is the best known of the Yellow Water-Lilies, being a native of our own country, but found also in Europe generally, and in Northern and Central Asia sparingly.

N. minima, syn. N. pumila, Smaller Yellow Water-Lily.—This is regarded as a diminutive variety of the last species. It is found in some of the mountain-lochs in the N. of Scotland, and differs from the species only in respect of size, and would be found more suitable for shallow waters, and the margins of deeper lakes.

Nymphæa, White Water-Lily.—The petals, being numerous, and inserted on the side of the seed-vessel in a freer manner, give the flowers a more graceful appearance than those of Nuphar have. Few objects are more graceful and interesting than well-cultivated Nymphæas, and our own British Water-Lily is scarcely inferior to those of the tropics. It should be cultivated in every piece of water in the country, where ornament is an object.

N. alba, Common White Water-Lily.—This is our native species, and it enjoys rather a wide geographical range over Europe, and

central and northern Asia. The leaves are deeply heart-shaped, the lobes overlapping. Flowers in June, July, and August.

N. nitida, *Shining-leaved White Water-Lily*.—The leaves are roundish oval, heart-shaped; the lobes open, deep, and spreading. Flowers in July and August. Native of Siberia. Not often seen in gardens in this country, but worthy of extensive favour.

N. odorata, *Sweet White Water-Lily*.—A North American species, of which I have no experience in the north, but which succeeds well along with other hardy Water-Lilies in southern counties. The leaves are round, deeply heart-shaped, with open spreading lobes. Flowers in July and August.



MY EXPERIENCES WITH THE AURICULA.

STRANGE to state, though I find myself a cultivator of the Auricula, I am wellnigh at a loss how to explain the reasons that induced me to take this flower in hand in the first instance. I had always possessed a love for flowers—and where “breathes the man with soul so dead” that does not love them in some form or other?—but my wishes in the early part of my career as an amateur florist had not gone out towards the Auricula. Now, I confess, I am a cultivator of this once popular but now sadly neglected flower, and I find it to be a pleasant pastime. It unfolds to me, in the flowers I at present grow, forms of beauty as curious as they are captivating; and they, by the seed they yield me, and the young plants I am enabled to rear from it, give me an earnest of new joys in the years to come.

As a cultivator of the Auricula I occupy a somewhat isolated position, residing as I do in a populous district, where, besides myself, there is, to my knowledge, only one other lover of this flower. I hope this will not always be so, as I lose no opportunity of exhibiting my Auriculas; and I already find the production of my flowers has begun to excite some interest in their behalf, and to bring out inquiries as to my method of growing the same; and with these there will also come, I trust, some anxiety to emulate my doings, and perchance reach a higher level of cultural skill.

When I have been asked for “my experiences,” I have rather chosen to refer my questioners to some old standard works on Auricula cultivation, but this answer has not afforded general satisfaction. So now I attempt to write them down for perusal; and when next I am asked the same questions, I shall be able to refer all further inquirers to the pages of the ‘Gardener.’

I commenced my experiences with the Auricula about seven years since, by the purchase of a few plants of some common Alpines, for the decoration of my window. The attendance and care these required, and the beauty of their flowers, first formed in me a taste for them not hitherto felt; and the succeeding year a few other plants were obtained, and my stock increased. Next, I began to raise seedlings, and for this purpose got from a London house some packets of seed; but this grew so badly that I resolved to save seed for myself from the plants I possessed; and having done so, it was sown, and the produce amounted to about three dozen plants. This was something to call forth my capabilities to the utmost, as to save this batch of plants, grow them on, and flower them, was indeed an object worthy of my ambition, whilst the enjoyment to be derived from the constant watching of my slowly-opening seedling flowers was indeed great in the anticipation of it. But I speedily found that the gradual increase of my stock rendered necessary some more useful means of housing them than I had hitherto possessed. For this purpose I procured a neat two-light frame, and had fitted to it a trellis bottom of wood; this was placed upon bricks under an east wall, and the frame dropped carefully over it upon other bricks, so that there was a constant circulation of air beneath and around the pots. This frame I nearly filled with my stock that winter, as, in addition to my seedlings and old plants, I had propagated from the latter a certain number. I now began also to perceive that it was necessary to exercise considerable caution in the use of the water-pot, and preferred to let my plants remain comparatively dry *during the winter*, rather than endanger them by excessive moisture. Of course, as the spring advanced, I became more emboldened, and now and then, when quiet rains prevailed, pulled the lights off altogether, as I believe that a good soaking so administered is beneficial to the plants. As the blooming period approached, and with it much warm sunshine, I became conscious that a somewhat cooler situation than the frame afforded was requisite, and also that a stage upon which to arrange my plants to better advantage, and in a less crowded manner, was a desirable object to possess.

Fortunately a narrow border under my east wall suggested itself as the very spot; and having plenty of loose bricks about, I so arranged these as to make them support a rising series of six lengths of open shelves, made of strips of wood $1\frac{1}{2}$ inch square, and about 15 feet in length, using two strips for each shelf. Over this was constructed a framework of wood, consisting of stout uprights, those behind being 4 feet in height from the ground, and those in front $2\frac{1}{2}$ feet. The distance of these supports apart lengthwise to the border was about 3 feet 9 inches, and across the border 5 feet. Upon each pair of these,

crosswise, was fixed a grooved rail, on which to place what I intended to provide for shading purposes; and these rails, when fixed, gave a fall of about 1 foot 6 inches. Both back and front another rail was fixed lengthwise to secure each upright in its place, and thus my framework was constructed. The "shades," as I term them, were made of light wooden frames 6 feet in length and 3 feet 8 inches in breadth, and having a narrow rail across the centre; these were covered with calico sheeting, and coated with boiled oil. And having given all the woodwork a couple of coats of paint, my *al fresco* stage for the housing and exhibition of my Auriculas during the blooming period was perfect.

When my seedling plants began to develop their flowers, all were (to me) very interesting and pretty, and they contained some really nice things; yet, when my critical friends dropped in to see them, they would persist in taking exception to the colour of this flower or the form of that, to such an extent as almost to make me despondent; but, fortunately for my equanimity, I got no stint of praise for the good cultivation the plants displayed; and one friendly critic having explained that to secure better kinds in the future I must select my seed from the best-formed flowers only, I plucked up further courage, and resolved to try yet another batch of seedling plants. I also got, just then, great encouragement by taking a few dozen of my best plants to a neighbouring spring show, and getting for them the highest honours the judges could award. This made me ambitious to secure some of the fine show kinds of which I had heard so much, but seen so little; and a few small plants of edged kinds were purchased, so that I might have the pleasure, in future years, of seeing them grow and bloom under my own care and cultivation. Compared with the Alpines, I find that these same show kinds are rather "miffy" things, as it is termed, and are slow of growth; moreover, they cost a lot of money, and when they do flower (which duty they are not in a hurry to perform), I certainly got that fine form and those decided markings that florists value so much, but as to affording much to look at—well, that may be another question. My fellow-cultivator in the neighbourhood goes in for the show Auriculas largely, and spends upon them considerable sums. He will tell you this one cost so much, and another still more, and that he deals with all the big growers. But, after all, beyond satisfying his peculiar fancy, he has not much to show his friends: perhaps he does not do them well; he thinks he does; but in any case, whether it is so or not, I shall still cling to my favourite Alpines. Last year I grew a large batch of 200 seedlings, and in consequence of this great increase of my stock I found it necessary to obtain another two-light frame in which to house them. As the whole of these were in large

60-pots, I had not too much room, but the entire stock passed safely through the trying ordeal of the recent severe winter. Of course, from such a number of plants I have had a considerable variety of flowers, all of which are pretty, though many are deficient in colour and form; these I shall get rid of or turn out in my flower-beds, and so make room for the next batch of seedlings that are now coming in. I feel that I should forego one of my greatest delights were I to leave off raising from seed. To watch the opening flowers of the little strange ones, affords one so much interest that I trust I shall continue to enjoy that pleasure for years to come. The best time to sow seed is almost as soon as possible after it is ripe, in some shallow pans filled with finely-sifted sweet loam, leaf-soil, and sand; cover over with sheets of glass, and place in a frame, watering with care. By the end of the autumn these seedlings will be ready to prick out into other pans, in which they may stand the winter, and in the next spring will be large enough to shift into sixty-pots; then they should have a cool situation, slightly sheltered during the summer, and in the autumn another shift into 48-sized pots, using a good rich compost of loam, rotten dung, and sand. After passing through another winter, the plants will bloom freely and abundantly; and if the strain be good, a lot of very handsome flowers will result. Lest what I said previously about purchasing seed should deter any from buying, I may add that I got some from another source last year, and it has come up admirably. I have no present intention of extending the space or material at my disposal for the cultivation of Auriculas. I can now house and grow with comparative ease some 300 to 400 strong plants, and as I shall continue to weed out bad ones, it will be some time hence ere I shall be quite full. Having now quantity, I shall aim at the possession of quality, and trust to kindly hints from brother growers, and growing experience, to enable me to secure this desideratum; and if in the course of my labours I can infuse into my friends and neighbours a love for the Auricula and its culture, I shall be amply repaid. Let no one imagine that I am not in truth an "Auricula Amateur." I leave my suburban home every week-day morning at half-past eight, and walk three miles to the performance of my daily duties, where, absorbed in books, figures, quantities, and calculations, I have little time to think of my pet plants at home. But when the day's labours are over, and I once again return to my domicile, depend upon it I seldom take rest or refreshment till I have cast a glance of anxious care over my humble, but to me very precious, collection of "Alpine Auriculas."

R. M. S. P. C. S.

[We are thankful for this record of "Experiences" as an amateur cultivator of the Auricula from our correspondent, and wish him good-luck in the time to

come. Possibly he will incur the criticisms, perhaps the rebuke, of cultivators of the show kinds, but he need not be discouraged if such happens. He is now mastering the rudiments of his education as a cultivator of the Auricula; and we shall always be glad to see what he has to state in regard to his pet flower.—
EDS.]



THE CULTIVATION OF HARDY FRUITS.

(Continued from page 203.)

THE APRICOT.

THE young Apricot tree, after it has attained the age of three, four, or five years, should be in a good condition for planting in a permanent position. No young tree should be so planted unless it is in perfect health, making abundance of strong wood, and having vigorous roots. Trees not in a flourishing condition before planting can never be expected to make satisfactory trees. If the Apricot does not produce a healthy tree, possessing six or seven branches at three years' growth from the bud, the chances are it will not do so at four or five. With regard to the best season for planting the Apricot, I think most cultivators are agreed that autumn is the period for planting of all our large-growing hardy fruits—say the end of September or beginning of October. If planted then, the roots will start and make young spongioles ready to begin their work with the earliest dawn of vegetation in spring. The value of early planting will therefore be apparent to every gardener. If not planted before the middle of November, delay the operation till the middle or end of January, but not later than the middle of February. As the Apricot is early excited into growth, late planting should be avoided. The tree planted in autumn will not require so much watering and mulching as the one planted during winter or early spring, although it would be to its advantage, planted at any season, to have the benefit of a little attention in this way for the first year or two, especially if the season should prove very dry. Where mulching is done, I would recommend its removal about the middle of August, so that any superfluous moisture might dry up before the rains of autumn and winter set in. This will materially assist the ripening of the wood and the perfecting of the buds.

The next thing to be considered is the situation best suited for the Apricot. It is seldom the Apricot is planted as a standard, and this mode of cultivation is never attended with any amount of success except in one or two of the best districts in England. The Breda, the Brussels, and the Roman, being the hardiest, are generally selected for

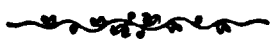
this purpose. Wall cultivation is pretty generally adopted throughout the United Kingdom : to this I will confine myself. In the south of England both the east and west aspects have been selected for the Apricot, but in my estimation the west is the better of the two. In spring, when the trees are in bloom, sharp frosts are apt to set in from the east and north-east, so that the trees having an eastern aspect are more likely to suffer than those on a west wall, especially if with the frost comes a slight breeze. It may be argued that nets will protect the blossoms, but of this I am somewhat sceptical ; for though the frost falls perpendicularly, yet in proportion to the motion of the atmosphere will be the angle at which it will fall, so that the greater the angle, the greater the chances will be for the frost to find its way to the flowers. In the western aspect the reverse takes place, for the greater the motion in the atmosphere the greater will be the chances of its being carried clear of the trees. All things considered, I prefer a west to an east wall for the Apricot in the best districts of the country. In the northern parts of England and the whole of Scotland there can be no doubt that the south is the best aspect for it.

The soil which best suits the Apricot is a good friable loam, free and open, and having a fair admixture of sand, should this not be possessed by it in its natural state. Great attention should be given to the making of the borders, as much of the after-success depends upon this. Drainage is of prime importance ; for though the Apricot delights in moisture during the growing season, yet it is very impatient of it at other times, more especially if stagnant about the roots. To obviate this, let the border be well drained, having an arterial drain passing along the front of the border at the depth of $3\frac{1}{2}$ feet or more, with branch ones running up every 10 or 12 feet from it to the wall. These having been carefully placed into position, let 6 or 8 inches of rubble be placed over the whole bottom of the border much in the same way as for Vines. This will assist the drains to perform their work, and prevent, to some extent, the falling in of the soil upon the tiles, which might find its way into them, and probably fill them up. As I have before stated, the opener and freer the soil the better for the Apricot. A light loam from an old pasture is the best—the more fibre in it the better. It should be cut several months before it is required, and put into a heap so as to destroy vegetable growth. The soil before being used should, if in the least approaching “heavy,” have a quantity of some such material as lime-rubbish, charcoal, or wood-ashes added to it, in proportion to the quantity, to make it porous and free. Should none of these be easily procured, I should never hesitate to use manure such as can be procured about all towns, with a good mixture of coal-ashes in it. This having been got ready, let a layer of turf be laid over

the rubble in the bottom, and fill in the soil to the desired depth. This operation should be done a few weeks before the planting takes place, so that the whole may have somewhat subsided. The young trees may then be carefully lifted, using steel forks for the operation, so as to injure the roots as little as possible. All rank root-growths should be cut away by a clean cut, and should any of the roots have a downward tendency, they should be removed if not capable of being placed in a horizontal position. In the act of planting, put 2 inches of finer soil where the roots are to lie. Place the tree upon this, spreading out the roots regularly in every direction, cover them over to the depth of 2 inches with the finer soil, and fill up the hole with the soil of the border. Should it be dry, a good watering will be necessary to settle the soil about the roots. When planting, the roots of the tree should be kept at least 6 inches from the bottom of the wall, or the result will be that as they increase in size they will press so much against the wall as to draw the upper branches away from it altogether. About the beginning of November a good mulching ought to be placed over the roots, to prevent their suffering from frost on account of their being placed so near the surface. This mulching may remain till the beginning of March, when danger from severe frost is over. About the beginning or middle of May, in very dry localities, it may again be replaced to protect the roots from the effects of drought, and removed in autumn as already directed. The trees when planted should not be nailed against the wall for some considerable time, as the result of this would be what is termed "hanging." They should, however, be tied up to a few stakes placed in the soil to prevent injury from wind.

JAMES M'MILLAN.

(To be continued.)



THE ART OF SKELETONISING LEAVES.

THIS subject having excited a little interest amongst some horticulturists recently, I took the liberty of appealing to a lady friend who has been very successful as a skeletoniser of foliage, requesting her to favour me with the *modus operandi* by which she produces her specimens; which, I may say, are of an admirable character, some groups of hers having received, a few years since, the highest honours that could be awarded in the particular class in which they were exhibited at a large and important county exhibition. I am pleased to say that my request has been cheerfully complied with, and I am enabled to lay the result before the readers of the 'Gardener.' We are first told that

“the art of skeletonising leaves and flowers would be found much less difficult of accomplishment were the nature and character of the various plants thoroughly studied at first. For instance, it would be but a poor guide to the learner to say, ‘Gather the leaves on a certain day,’ unless proper attention be also paid to the leaves chosen. They must have reached a certain degree of maturity, neither too old nor too young; and as all leaves do not reach this point at the same time, care must be taken that each kind is gathered when fit for use. The leaves of the Magnolia may be gathered when the plant is in bloom, varying in time from June to August; they will require from a month to six weeks for immersion, and are easy to dissect, as the fibre is so strong. Ivy ranks among the most difficult, but from the beauty of the formation of its fibre will well repay the trouble expended. These may be put in from the beginning of May until October, but should be leaves of the previous year’s growth. All leaves will not answer for dissecting, but those that have been most successfully operated upon are the leaves of the Magnolia, Ivy, Pear, Rose, Holly, Orange, Poplar, Willow, Elm, Lime, Service-tree, Spanish and Horse Chestnut, and Oak. The last, however, should not be put into the same vessel as the others, as it affects them in an undesirable manner. Certain seed-vessels will also dissect admirably, such as the Stramonium, Winter Cherry, Poppy, &c. To produce good specimens, put the leaves into a deep jar and cover over with soft water, which must not be changed; the jar to be put into a cool place. When, upon examination, the leaves are found to be quite soft, they must be carefully brushed in a plate of water with a camel’s hair brush. Then they should be placed in a weak solution of chloride of lime for a short time, to whiten the fibres, and afterwards washed well in two or three waters, and dried carefully between sheets of blotting-paper or linen; after which they are ready for mounting. To make stems for this purpose, thread stiffened with gum is most useful, and has a natural appearance. The leaves may be formed into bouquets or wreaths, according to the taste of the operator, and should be placed under glass shades to preserve them from harm.” This is the simple outline of the process, and if executed by the hands of the gentler sex, for whom it would prove a very fitting employment, a fair amount of success might well be looked for. It is evident that much nice discrimination in the selection of the right leaves is required, and a very light and careful manipulation is also essential; and in the case of failures no small amount of patience is needed to carry the operator through to ultimate success. I have seen the productions of the lady who has favoured me with these instructions, and can bear witness that they are beautifully executed and mounted. One handsome group, especially, would make a fitting ornament for any drawing-room; the branches of Ivy laid

upon the dark velvet covering of the stand were exquisite. Would it not be well if horticultural societies could be induced to offer good prizes to ladies for productions of this character? Certainly they require rather more labour than is necessary for the dressing of epergnes, or the putting together of a bouquet.

ALEX. DEAN.



EARLY-FLOWERING BEDDING TULIPS.

I WOULD fain hope many of the readers of the 'Gardener' have a kindly regard for these beautiful and attractive flowers. All the most gorgeous hues of the floral kingdom concentrate here, and aid to make a display worthy to be a constituent part in the poetic fancies of Eastern climes. So multiplied are the varieties annually offered for sale, that they may be said to afford almost every shade of colour and diversity of appearance; and, in addition, many of the most useful kinds for bedding purposes are sold somewhat cheaply, and therefore can be procured at a comparatively small outlay.

It has been advanced, as an objection to their cultivation, that the blooming season is too short in duration, and therefore does not sufficiently repay any extra outlay of trouble and patience about them. To this it can be replied, that the blooming season is by no means an evanescent one when the bulbs are planted in good holding soil. When they occupy poor impoverished ground, or when they have been allowed to remain on the border without being lifted and replanted at the proper season, they often induce disappointment; but when they become elevated into the position of "favourites," and receive treatment corresponding to the esteem in which they are held, they doubly repay the investment. I have now in my garden a border of them in fine bloom, notwithstanding the retarding influences of a rigorous and trying season; they are planted in light rich soil, and many a passer-by is moved to admiration, perhaps to envy.

Let me pass in review some of these flowers (would that I could present them with their rich, handsome, and varicoloured cups, "flaunting in the eye of day," robed in gorgeously-tinted apparel as veritable peers among spring flowers!) and to do that I will group them in colours, choosing the best in each.

Of self-white flowers, I must stand by the fine old white Pottebakker; of large size, stout, and finely formed, it can scarcely be equalled, much less excelled, either for pots or beds. I pass by such varieties as Pax alba, Alba regalis, Grande Blanche Royale, and others, as not to be compared with this.

Of yellow self-flowers, the best are Golden Prince and Yellow Pottbakker; large, full, and handsomely coloured, they do an excellent service used in any way. Canary Bird, Chrysolora, Prince de Ligre and others, certainly give a variety, but they cannot usurp the place of the two I have named.

Of crimson shades, the darkest and most distinct is Purple Crown one that cannot be too highly recommended for bedding purposes. Next come Couleur Cardinal, Vermilion Brilliant, and Garibaldi, the last a most useful dwarf variety; these three are distinct and good and all paler in colour than Purple Crown; Vermilion Brilliant is a grand variety for pot culture. Couleur Ponceau can also be classed with the foregoing; it is of a dark-crimson colour, but has a purple flame up each petal. Two purple self-flowers stand out distinctly by their obvious good qualities—viz., Van der Neer, deep violet purple and Paul Potter, rather paler in colour. With these should be classed three fine flowers I can best designate as belonging to the rosy-violet class of selfs—viz., Proserpine, silken rosy violet, extra fine; Reine Luisante; and Queen of Violets—all fine and distinct.

Of edged flowers there are two of marvellous beauty, Keizer's Krone and Duchesse de Parma, both crimson grounds edged with gold, the first named more broadly so than the other; of large size, and extremely effective as bedders. Of striped flowers, Marquis de Wassenrode, golden ground flaked with red; Bride of Haarlem, white and crimson stripes; Globe de Rigaud, white flaked with purple; Moment, bright deep red striped with white; and Cour de France, crimson flaked with pale yellow—all fine and good; and, lastly, a magnificent flower, known as Joost van Vondel, probably in its true character a self deep-blood crimson variety, but apt to come flaked and flamed with white; and a true companion to this, Princesse d'Ortriche, a broken form of Duchesse de Parma, dark bronzy crimson ground, heavily flaked and edged with gold.

Of the double-flowering kinds the following are most useful for bedding purposes; Emperor Rubrorum, Rex Rubrorum, and F. Eclatante, crimson self-flowers; Blue Celeste, dark violet; La Candide, white; Yellow Tournesol and Yellow Rose, yellow, the former of the two by far the best; Tournesol and Gloria Solis, crimson edged with gold, both extremely useful; Duke of York, crimson edged with white; and Couronne Imperiale, La Belle Alliance, and Mariage de ma Fille, striped flowers, rather tall in growth, and somewhat late blooming.

Beds or borders planted with Tulips should always have a carpet of some dwarf-growing plant or plants beneath them. Of these there are many that can be most advantageously used for the purpose, such

Saxifraga hypnioides, *Sedum acre aureum*, a perfect gem for spring work; *Sedum glaucum*, *Arabis albida*, white; *Alyssum saxatile*, yellow; *Myosotis dissitiflora*, blue; Double Daisies, Pansies of sorts, Cowslips, Polyanthuses, *Phlox frondosa*, *P. Verna*, and the chaste *P. Nelsoni*, and many other things; these can be used singly, or mingled together, so as to secure a succession of bloom. There are many ways in which they can be advantageously arranged, and a most effective display secured.

It must not be supposed that it is indispensably necessary a new supply of bulbs be obtained each year. With a little care the bulbs may be made to do several seasons' work, if, when they are lifted from the ground, they are removed with balls of earth about the roots, and planted away in a cool shady place, in some light sandy soil. Even the offsets made by the Tulips should be preserved, and in two or three years they will give a supply of blooming bulbs. A border should be prepared for them, in which they should be planted, and covered with 6 inches of a fine sandy soil. Here they should remain undisturbed for two years, when it will be found many of them will bloom. Perhaps a three years' rest would be best; and if the border were well trenched, manured, and a good supply of sand placed about the bulbs, the result would, in all probability, surprise the most experienced cultivator. Surely it will be admitted something can be said for the early-flowering bedding Tulips by an

OBSERVER.



HINTS FOR AMATEURS.—JUNE.

If the weather should be very dry this month, there will be difficulty in dealing with very sandy or strong clay soils, so much will be ready for planting; and if the plants should stand long in the seed-rows or beds, they will become stunted and weakly. The advantage of pricking out, preparatory for final planting, is felt when weather is not suitable for planting out. When soil is too dry, a liberal soaking of water may be given the day before it is wanted; it will then work well, and the plants will receive no check. Hoeing frequently will be nearly all the attention necessary. On poor shallow soil, much may be done by mulching thickly; where nothing better may be had, mowings of lawns may be turned to good account. A good breadth of French Beans may now be sown, and to do them well, a liberal dressing of rotten manure must be allowed, and all pods should be picked off before the seed forms. Broccolis, Cabbage, Brussels Sprouts, Cauliflower, and Kale may be planted without delay. A puddle of soil,

cow-dung, and soot may be used to keep the roots moist, and be a check to grubs, &c. Let the stems, as high as the leaves, be dipped in the mixture: a handful of soot and wood-ashes round the necks of each plant will keep vermin off them. Lettuces may be sown and planted in larger quantity: thin out the rows when fit, and plant the strongest in a shady position, which will make a succession. We get the finest Lettuces from Celery-ridges; they have a good depth of soil to root in, and being near the Celery, they get a good supply of water. Turnips: sow in larger breadths for autumn, and thin those which are fit to handle. Laing's Swede and similar kinds are useful for winter. Red and White Stone and Snowball are among the best to sow from this time forthwith. Keep the hoe in use among Onions as long as can be done, and dust frequently with soot or guano when weather showery. A good breadth of Parsley may now be sown for winter work; a sheltered position, free from damp, is most suitable. Thin sowings of Parsley make the best leaves: plant them on good soil, 1 foot apart. Pease may be sown two or three times during the month: the two last sowings should be earlier kinds, such as "First crop," Sangster's No. 1. Stake those requiring support before they fall over. In the south of England we have sown Pease about the middle of July and had fine crops from them up to November. Watering and mulching in time will do much to secure fine crops; if they are allowed to become stunted before the water is given, it will almost labour thrown away. Carrots and Onions may be sown for drawing young: mulching with litter or grass is often given to Carrots with good results. Radishes and all other salads may be sown as required. Good soakings of water are necessary; and at this season, when weather is dry, the soil in which small seeds are sown may be covered with mats or evergreen branches till the seed vegetates, and then the covering may be taken off by degrees. Vegetable Marrows and ridge Cucumbers where they can be cultivated in the open air, may be planted, first throwing out ridges and placing in warm dung. Leaves and a small portion of grass mixed answer well. Let the soil be returned, covering the warm material, placing a little fresh kindly soil where the plants are to be turned out to give them a start. Handlights over the for a time will help to establish the plants quickly. Gherkins and ridge Cucumbers may be placed 3 feet apart on the ridges or mound: vegetable marrows require more than double that distance. Cucumbers and Melons will now require less attention with linings, but more liberal watering and airing will be necessary. Melons setting the fruit should be kept dry, and air be given early in the morning; indeed we find it beneficial to leave on a little all night. Allow neither Melons nor Cucumbers to become crowded; cut off all weakly growth.

and let the heaviest watering be giving near the sides of frames, where the principal roots will be in abundance. Cucumbers in bearing may require a surfacing of good loam and rotten manure, and plenty of clear manure-water. Heavy cropping soon exhausts the plants; three fruits are enough to one Melon plant if two have been planted in one light. Dryness is necessary at ripening of Melons, when well-flavoured fruit is wanted. Tomatoes may be planted out on ridges sloping to the south: open spaces on walls suit well. Slates placed over the surface of steep borders help to bring Tomatoes on quickly. In southern market-gardens large quantities are grown with little more attention given than to Potatoes—laterals are taken off, fruit is thinned, and the plants are supported with stakes. Latest supplies may be grown in pots; and they can be taken under protection in autumn to stand where frost cannot reach them. Ours, which fruited in autumn last season, were in pots, and they kept up a supply till late in February; and some of the same plants kept in warmth are giving supplies now, beginning their second crop about the second week of May. Basil, Sweet Marjoram, and Ice plant, may with safety be planted on a south border. Chilies well established in pots may be turned out in a warm position. Let Celery be thoroughly watered, and after the plants are established in the ridges, a little soil spread over the roots as a surfacing will help to keep in moisture. Let later plantations be turned out in the ridges 1 foot apart, as soon as the plants will lift out of the nursery-beds with good balls. Shading will be beneficial in very hot dry weather. Manure-water can hardly be given too liberally, but not too strong: that from cow-houses is excellent for Celery.

Fruit-trees will now require looking over frequently. It is a bad practice to let the wood grow to great length and get matted, and then to take off large breadths of foliage at once. We prefer beginning at the top of trees, then in a week or two the middle is gone over. The base is gone over in due time. Where little growth is made, as in the case of well-established trees and those which have been carefully root-pruned, there is no necessity for much attention in summer. There is a great variety of opinion on summer-pruning or disbudding, but we prefer (after trying every system we have seen in print) doing as much in summer as we can, and avoiding winter-pruning as much as possible. This applies chiefly to Pears, Apples, Plums, Cherries, and Apricots. Trees growing too strong, and no fruit on them of any value, may have a little done to their roots now, cutting below the trunk, leaving the roots outwards untouched—overdoing is injurious. Wherever we have practised summer root-pruning, the best results have attended the operation, especially with stone fruits. Where walls are low, leading branches of trees may be taken over where suitable, and may be

established on both sides. Many trees perish from not having enough space to grow upon. Continual cutting brings on canker, then decay follows. Old Jargonelle Pears, Apricots, and Morello Cherries, often met with in houses growing how they may, with little labour bestowed on them, show what is most suitable for their welfare. Plenty of space saves the knife, both at top and roots. Figs growing vigorously may have their tops taken off at fourth or fifth leaf, which will turn them into fruit. We do all our pruning to Figs in the growing season and root-prune whenever there are signs of useless growth. We never have a failure with this fruit, but can supply strong manure-water throughout the whole growing season, and few shoots are made established trees longer than 4 or 6 inches. Abundance of fibre and plenty of stimulant give plenty of large fruit. When gross shoots are made on young trees—such as Carrington and Castle Kennedy Figs—we make notches in them about every 8 inches apart, and young shoots are thrown out. The tops are taken off when the fifth bud is formed, and fruit generally shows itself at once. The system of cutting-in and cutting-out young wood annually, if not done by experienced hands, too often ends in failure. Whether we train in fan-shape upright, or horizontal (and all these we try), leading shoots are to be equidistant, and kept in their place, similar to trained Pears and Apples. Cultivating Figs in pots is an easy method of managing them; watering, surfacing, and pinching are all that is then required. Potted ones are easily managed: some we have grown in this way, spurred in more for the sake of getting leaves, are now loaded with fruit, and, though shaded by Peach-trees trained over them, they grow to a good size. White Marseilles is an excellent kind for growing to cover walls which are shaded by Vines or otherwise. On some of them we had fine fruit, yellow as gold, in April; now they are crimson, different in shape all on same tree. The second crop, which is a hard one, will probably be of a brownish tinge. Position and cultivation change the character of Figs entirely; our favourites are Black Isabella, Brunswick, Brown Turkey, and White Marseilles. Sometimes with Castle-Kennedy and Brunswick are exactly alike.

The lifting of bulbs when they are done flowering will now require attention. To make way for flowering-plants, the bulbs may be carefully lifted with all their roots and some earth attached, and placed in sand till they ripen. Summer flowering-plants may be planted now; and if watering is necessary, give all the soil plenty, and hoe the surface soon afterwards. Mignonette, Stocks, and other sweet-scented plants, should be plentiful. They are favourites with every one. Sowing Peas: stake and keep the pods off them; top if they get too large. Bud Roses as soon as the bark peels off readily: when done early

plants are well established before winter. Far north this can scarcely be done yet. Stake all plants, such as Carnations, Pinks, &c., requiring it before they fall over. Sow seed of Pansies, and increase the stock by cuttings. Allow nothing to seed except to be saved for sowing.

Chrysanthemums place in their flowering quarters ; give plenty of water, and keep drainage clear where they are in pots. Geraniums, where in flower, shade from bright sun, and water with manure-water. "Stage" sorts done flowering should be placed in the sun to ripen their wood. Growing plants of all kinds will be benefited by syringing after warm days. They may be watered now in the after-part of the day, allowing enough to moisten all the soil. Dahlias fasten to their stakes, and when in active growth give plenty of manure-water. Roses which have flowered in pots may be examined ; fresh turfy loam, if at command, may be used for potting them. Plunge the pots in a half-shady position for a time ; water freely as roots increase, and keep off all insects by syringing ; allow no flowers to come on them or any other plants which are to flower in winter. Scale on such plants as Camelias, Oranges, and Myrtles must be cleanly washed off if healthy foliage is wanted, and all plants without it are not worth their room.

M. T.



NEW PLANTS OF THE PAST MONTH.

SINGULAR to state, no Orchid has received the distinction of a certificate since the last record of new plants. In the way of Palms, Messrs Veitch & Sons received first-class certificates for the following, all of graceful and elegant growth :—*Euterpe Sylvestris*, *Areca monostachya*, *Deckenia nobilis*, and *Geonoma pumila*. A similar award was made to *Macrozamia magnifica*, a species from North Australia, the roots of which are used as food by the natives, from Mr Kennedy, Covent Garden : it has very handsome fronds, with long lance-shaped leaflets. In the way of Ferns, Messrs Rollisson & Sons have received a first-class certificate for *Pteris straminea attenuata*, an elegant greenhouse Fern ; the same award was made to Messrs Veitch & Sons for a charming species of *Adiantum*, named *Veitchii*, received from Muna. Of handsome foliaged and flowering plants of rare merit the following have received first-class certificates :—*Carludovica rotundifolia*, a handsome-looking plant, allied to *Pandanus*, from Messrs Veitch & Sons ; to *Tillandsia Lindeniana*, a beautiful stove herb, having a naked flowering-stem like the Hyacinth, and a double row of large, rich, blue flowers with a pale throat, situate about 6 inches above the leaves. This plant was obtained by Mr Linden from Brazil, and this

was the first occasion of its being shown in flower in England. Also to *Cochliostema Jacobianum*, which has been termed the "best new plant of its season," and was now shown for the first time in bloom in England. It has large, spreading, and somewhat recurved leaves, and from the axils of these leaves issue a succession of flower-stalks bearing bunches of purple and white flowers of great beauty, and emitting an agreeable perfume. The plant, which is described by the botanists as an Epiphytical Commelynad from Ecuador, is of vigorous growth, requires stove treatment, and has to be well supplied with water during its growth. Both these came from Mr B. S. Williams, who also received the same award for *Agave Verschaffeltii*, a good addition to this popular class of succulents; and a similar award was made to Mr Green, gardener to W. Wilson Saunders, Esq., for *Pothos ventricosa*, in flower—one of those singular-looking plants of botanical value so much esteemed by Mr Saunders.

In the way of flowering plants, Mr T. S. Ware, Tottenham, received the same award for a very handsome but remarkably curious species of *Iris*, very dwarf in growth, having one flower of singular marking and beauty; to Messrs Rollisson & Sons for *Erica tubæformis*, also for *Rhododendron fragrantissimum*, having white sweet-scented flowers; to Mr B. S. Williams, for *Gloxinia Scarlet Gem*, with glowing scarlet flowers of great depth of colour—an upright blooming variety; and to Mr Charles Noble, Bagshot, for *Clematis Lord Londesborough*, a bronze-coloured flower shaded with blue and red, one of the valuable hardy early-blooming strain Mr Noble has obtained from seed.

In the way of florists' flowers, first-class certificates have been awarded to the following:—Grey-edged *Auricula*, Colonel Champney from Mr C. Turner, shown in fine condition; variegated *Zonal Pelargonium* Ealing Rival, very finely coloured, from Mr Stevens, Ealing; a white-edged variety of the same division, named Mrs Colonel Wilkinson, from Mr Janes, Highgate; to Waltham Bride and Avalanche, two pretty silver-edged varieties bearing white flowers, both from Mr William Paul; to a fine new Tea Rose, named Celine Noirey, with pale-blush flowers, the outer petals of a bright crimson shade, from Messrs Paul & Son; to Fancy Pansies, Sunshine, Mrs Shirley Hibberd, and Mrs Felton, neither of them worthy the award made, from Mr Henry Hooper, Bath; to Waltham, dwarf yellow flower, a dwarf yellow-blooming variety, largely used at Belvoir Castle by Mr W. Ingram, from Mr William Paul; to a yellow self Pansy named Golden Bedder, from Messrs E. G. Henderson & Son, but shown scarcely adapted for bedding; and to *Viola lutea major*, a large deep-coloured variety, having the appearance of making a very valuable bedder, from Mr Robert Parker, Tooting.

R. D. —

A CHAPTER ON OVER-ATTENTION.

UNDER this head may be enumerated a variety of bad practices, as numerous, perhaps, as those which are classed under the general term **Neglect**. Among these, the system of watering usually adopted takes a prominent position. In hot weather, when the ground is dry, and plants are beginning to droop from the heat of the sun, the uninformed amateur usually sets to work and waters the whole of his flower-garden, the water being carried in many cases direct from the pump. It is consequently several degrees colder than the atmosphere or soil—having much the same effect on the constitution of the plants as would be likely to be produced on a human being by drinking a quantity of cold water when in a state of violent perspiration. I said, “waters the garden,” but I mean the surface of it. So that the surface of the soil and the foliage of the plants are wet, presenting a nice cool appearance, the owner is satisfied; he considers he has done a few hours’ hard work, and consequently a considerable amount of good. Now, in my humble opinion, he had far better have amused himself in some other way, and have let nature alone, unless he had considered how he could have better imitated her. Watering should never be attempted unless it can be properly carried out. Few things are more injurious to the well-rooted plants than occasional sprinklings of the soil. Syringing the foliage of plants with tepid water in the evening, in dusty weather, is very beneficial, as it cleans the foliage, and acts in some measure like heavy dews. When water is intended to be given, it should be taken from a pool or brook. If neither is at hand, a sufficient quantity should be pumped in the morning and allowed to stand exposed to the sun for a day at least. Instead of just wetting the surface, the soil should have a complete soaking, so as to reach below the lowest of the fibres; if such is not the case, the small white roots will be turned upwards in search of moisture, and in a couple of days probably will suffer from the burning sun. The roots of plants will always follow after their food, and if left to cater for themselves will generally make the best use of what is within their reach. As a test of this, let the cultivator lay a slight covering of rotten manure on the surface of the soil, in the vicinity of healthy plants, and in the course of a week, on taking the manure away, he will perceive hundreds of small white fibres attached to it, which have found their way there for the purpose of feeding upon the food which is placed near them. The reader will understand by this that it is better never to attempt watering established plants in the open ground unless the plants are kept well supplied with moisture, which, in such cases, can only be done by constantly soaking the soil whenever it may become dry on the surface. No

plan is so beneficial as what is termed "mulching," that is, laying a covering of grass, manure, cocoa-nut fibre, spent hops, or any like material, on the surface of the ground, which should always be done after soaking rains. This practice prevents the evaporation of moisture to a great extent, and keeps the temperature of the ground much more regular than any system of watering could do. The great objection to "mulching" is the slovenly appearance it gives to a garden, so that it cannot be done in flower-gardens generally; still I would rather make use of something of this kind than be compelled to adopt the laborious and uncomfortable practice of watering. Many persons think that much more benefit is derived by the plants from even judicious waterings than I am inclined to suppose is the case. To satisfy myself on this point, a few years ago, on an occasion of dry weather setting in, in the early part of the summer, I made a practice of watering an onion-bed three times a-week with water from a pond. Another bed by the side of it, growing under similar circumstances and sown at the same time, was left entirely to nature. The bed which received the attention spoken of in about ten days looked much superior to the other, the Onions being greener and growing much quicker; but when the rain came, I was pleased to see the neglected bed was inclined to make up for lost time, which it most certainly did, the crop eventually being quite equal to that of the favoured bed—plainly showing that I had been working to no purpose.

C. J. P.



GARDEN RECORDS.

NO. VI.

SWYNCOMBE PARK, HENLEY-ON-THAMES, THE RESIDENCE
OF THE REV. C. E. RUCK-KEENE.

(Continued from page 223.)

WHATEVER else of interest may belong to this charming place, situate in one of the most pleasant parts of the fine agricultural county of Oxfordshire, it has come to be regarded as the home of the glorious *Bougainvillea speciosa*. It is now cultivated in many parts of the country; but here the visitor can see a specimen of it so grand in development and ravishing in appearance, that he can only stand by it wrapt in mute wonder, and be filled with gratitude that he has been permitted to look upon such a wondrous floral vision. The plant at Swyncombe was brought here from South America, in 1857, by the Comte de Rouelle, and was then so small as only to have two or three leaves on it. It was pushed on into growth by Mr Daniels, the gardener at Swyncombe, and in 1860 it had attained a considerable size, and bloomed profusely, throwing out from each terminal spray a number of lovely mauve-coloured bracts in the form of an

inflorescence. Cut specimens of it were taken to the great London shows, and the whole country rang with the praises of this horticultural wonder. Years ago it had been brought to England, having been introduced from Rio Janeiro by Mr Bougainville, from whom it derived its generic name, but all attempts to cultivate it failed. Mr Daniels planted out his specimen at the end of a low span-roofed house, close to the boiler: he gave it an abundance of dry heat, and very little water; and in adopting this plan he hit upon the mode of cultivating it best adapted to bring out its superb beauty. Since then, each succeeding season has brought a recurrence of the marvellous display made by the plant; and year by year the plant increased in size, and at the present moment, were each terminal spray hanging down from the roof clothed in glittering mauve, spread out over the interior of the house, it would be found to cover a space of some 800 superficial feet. Happily for its grand effect, it is almost incapable of strictly formal training; the shoots hang like pendent wreaths in the most admired negligence. The natural freedom thus assured is far more elegant than the restraints of art; you look above on to an inner roofing of the brightest, and yet softest, hue of colour; its luxuriant wealth of flowers can then be rightly appreciated; and the heart in fine admiration feels more than "lip can e'er express." Would that the house in which it is growing were better adapted to show off its manifold charms! What was said of it in 1860 can be stated now with accumulated truth: "One wants to look down upon it, as it is looked upon by the sun, to which its blossoms are displayed. At a distance from it, and standing on a somewhat higher floor, you see imperfectly the upper surface of the mass of bloom lying nearly close to the glass; and in the slanting light of the evening sun, the whole of the leafy canopy reflects on one side an almost glowing sheet of colour; while on the other, partly in the shade, and the semi-transparency of the coloured bracts thus coming into play, it has more of an amethystine hue."

Some idea of the size of the plant may be gained, when it is stated that the stem, near the surface of the pit in which it is planted, measures 16 inches in circumference. The lateral shoots forming the blooming wood are simply thinned out, not headed back; the plant is thus allowed to extend itself, but all gross shoots springing from the old wood are cut back close, and on no account allowed to grow. This strong growth can readily be distinguished from the wiry growth that furnishes the blooming wood. The roots of the plant have got away out of the house, quite beyond the control of Mr Daniels. He supposes they have penetrated into a neighbouring vine-border, also into a pit used for forcing Potatoes, as well as into the chalk rubble underlying the paths about the house. Notwithstanding this freedom, it blooms as profusely as ever, without stint of quantity or beauty.

The house it occupies was originally a long low span-roof in two divisions; the *Bougainvillea* being planted at the farthest extremity of the house. It gradually filled the division it occupied; the glass of the top of the partition was then removed to admit of a passage through for the leading shoots; and last year, additional liberty was afforded it by the removal of the partition altogether. A fine specimen of the later-blooming *B. glabra* shares the roof with it, and occupies that portion of the house nearest the door. Just as the glorious beauty of *B. speciosa* begins to fade (it begins to bloom early in March and continues till the end of May), then *B. glabra* takes up the floral service, and from April till Christmas hangs on its branches blossoms numberless, in such clustering masses as to hide the glass. The bracts of *B. glabra* have a glowing light pink hue, and form a fine contrast to *B. speciosa*. This species is cut back hard to the old wood in the same manner as a Vine, and flowers from the young wood of the first growth.

B. speciosa flowers from the wood made the preceding year. Mr Daniels cultivates several other species, but with the exception of these two, and *B. splendens*, having larger bracts than either of the preceding kinds, which are of a very bright pink colour, shaded with crimson, the others are scarcely worthy cultivation. Many gardeners about the country have *B. spectabilis*, but fail to bloom it. Whatever they will, their best efforts are abortive. Mr Daniels states it is a winter-blooming species; the bracts show in November somewhat freely, but drop off for want of sun heat and solar light. All attempts to change its season of blooming have failed. In his own words, recently contributed to the 'Gardener's Chronicle,' Mr Daniels shall describe his mode of treating the Bougainvilleas:—

"I will now proceed to give a few plain directions for their treatment, which, if followed out, will not fail to produce blooms. If they are to be seen in their full beauty, they must be planted out, and allowed to fully develop themselves. Then we can get beautiful branches of bloom from 3 to 6 feet long. I would recommend any one receiving a young plant to proceed as follows:—If small, give it a shift, and plunge it in a Cucumber or Melon house, or a Pine-pit, with plenty of bottom-heat. Shift on as often as the pot becomes filled with roots. It will fill a 13-inch pot with roots in the course of one summer. Train out the branches to their full length, and withhold water about August for the purpose of thoroughly ripening the wood. Stand the plant away in a warm corner of the stove for the winter, only giving sufficient water to prevent its leaves from dropping off. Early in the spring prepare a pit for it, 3 feet wide and 6 feet long, and larger in proportion if more than one are to be planted in it. This may be prepared just in the same way as a pit for Cucumbers or Melons, with a hot-chamber under it, and two or more pipes running underneath for bottom-heat. Plant out in this bed in good friable soil, consisting of leaf-mould, rotten dung, and sandy loam, with a little sand and peat, and charcoal if obtainable. Water sufficient to settle the soil, which keep a little moist through the growing season. Be careful to dry off and ripen the wood thoroughly before autumn, then keep the plants dry till January, when they will begin to show bloom, and when they may be gradually moistened by giving water in a sufficient quantity to wet all the soil. I have never seen them bloom better than in several cases where they have been planted out at one end of a Cucumber or Melon house, and where they have been subjected to about the same treatment as these plants, with their roots growing in the same bed with them."

In a nice span-roofed house, filled with flowering and foliaged plants, were some capital pots of *Lachenalias* done much better than is usually seen. As soon as the plants have done blooming, Mr Daniels lays them to rest under the greenhouse stage till the end of the summer, when they commence to grow. They are then shaken from the pots, and eight or nine of the largest bulbs are placed in a 6-inch pot, just covering the surface of the bulbs. The soil used is one compounded of fibry loam, leaf-soil, and silver sand. The plants are then placed in a cold pit till Christmas, and then taken to the house to bloom in February. A generous treatment brings not only an abundant bloom but fine spikes of flower.

A rapid look through the Vineries and Peach-house showed everything in prime condition. The Peaches were the forwardest we have yet seen; Keen's Seedling Strawberries were being largely forced. Mr Daniels sticks by this old kind as the best for his purpose.

The kitchen-garden, though small, had much interest about it. Mr Daniels has a chalk subsoil, and during dry seasons he suffers much from the drought. Apples and Pears are generally grown as bushes—the shoots brought down from

as to give a bush form to the trees. The young wood of the previous year bore an abundance of fruit of fine quality. The manner in which these fruit has induced Mr Daniels to attempt the cultivation of Apples and he has now a row along most of the borders of the kitchen-garden about 18 inches from the path, and trained to a stout galvanised-iron wire about 18 inches in height. Those that had been planted two years ago were covered with blossom, and had the appearance of a floral bottle-brush. The best kinds of Apples are being cultivated, and Mr Daniels is sanguine of the success of his experiment.

The border of Figs, having a south-western aspect, was also noticeable. The wall was 12 feet in length and 8 feet in height; in front of it was a border 6 feet in width, the wall coming out to the pathway at right angles at each end. Over it, at the back, and supported on stout poles at the front of similar height to the wall, was a glass roof, the border being entirely on the path side. Six brown Turkey Fig-trees were planted against the uppermost shoots nearest the roof were brought forward and tied out along wires running lengthwise, 5 and 6 feet in height. At the time it begins, a good soaking of water is given, and that suffices to carry it through the season, save and except such rain as finds its way to it. From the end of July to the end of October there is a plentiful supply of fruit. The border is also utilised for the production of early Potatoes, Lettuce, Radishes; and also for cultivating two lines of Cordon Apples, one about 15 inches from the ground, the other a foot higher.

In front of the mansion we found a pleasant terrace-garden planted with flowering and foliaged plants: of the former, Daisies, Pansies, Myosotis, &c., very pretty effective arrangements being worked out. There was also a border in front of the house, and it struck us that a back row of *Dielytra spectabilis* with the old purple Honesty (*Lunaria biennis*) was a capital arrangement.

In the terrace-garden the pleasure-grounds swept away in a gentle declivity to the confines of the park, admitting of space for some fine specimen Conifers of notice. The spot occupied by these had a deep substratum of chalk, very exposed (about 750 feet above the sea-level), and being open to the effects of the west winds coming sweeping over from the Bristol Channel, and the valleys of Wiltshire, Berkshire, and Oxfordshire. There was a specimen *Pinus gigantea*, planted in 1861, about 21 feet 9 inches in height, the circumference of the stem next the ground being 3 feet 9 inches, the girth of the stem at 30 feet from the ground, 30 feet, and pretty well covered with cones. This was the result of the rigour of the previous hard winters without sustaining the slightest injury, although the keen cutting east winds of the past winter had very much browned the foliage. There was also a specimen *Pinus insignis*, planted ten years ago, now a well-furnished tree 12 feet in height; a Cedar of Lebanon, planted in 1843 or 4, a very healthy specimen, 40 feet in height, but lost its leader in 1860; *Cedrus Deodara*, planted in 1843, now 38 feet in height, a very fine well-furnished tree, with a stem 12 inches in circumference; also a fine *Pinus Austriaca* and others; all of which are possessing a close wiry habit of growth, probably owing to the position. In the fringes of carriage-drives, shrubbery borders, woodland walks, &c., we have seen many pretty spring flowers, half naturalised, and lighting up with all the beauty of many an otherwise dreary-looking spot. The double and single *Anemone nemorosa*, as well as the rose-coloured single variety, the *Anemone appennina*, glowing Oxlips, Scillas, Narcissi, &c., were being used to great effect.

The house occupies the sunny side of a pleasant valley, and securely nestles in a grand piece of woodland, which serves as a screen from northern and eastern blasts; before it rises up a wood-crowned hill; on the right, at the end of the valley, were the well-known Chiltern Hills, covered with manifold tufts of Juniper bushes, and presenting an unusual but very picturesque appearance. On the south side, away over the rising-ground, lies at a distance of some 7 miles the charming Oxfordshire town of Henley-on-Thames, a famous summer resort for pent-up and half-stifed Londoners.

It is worthy of record in this relation, that 2 miles below Henley-on-Thames, charmingly situated on the banks of the noble river, stands Greenlands, the residence of Miss Marjoribanks. Mr W. H. Good, the gardener at Greenlands, also cultivates the *Bougainvillea speciosa* with amazing success, and at the time of our visit a magnificent plant, loaded with its rich garniture of mauve-coloured wreaths, covered a great portion of the interior of the roof of a lean-to plant-house. Mr Good obtained his plant from Swyncombe about 1860, and his success as a cultivator has been coequal with that of Mr Daniels. We are proud of them for their work's sake, and heartily wish them continued success with these splendid plants in the time to come.



RICHARDIA ÆTHIOPICA.

ALTHOUGH this plant is not new, still it is one that can never be altogether uncared for. To those who have to provide a great many plants for winter and spring decoration, it is especially valuable. It continues flowering for three or four months without interruption, bearing several singularly beautiful white flowers on each plant. A charming floral spectacle is presented in early spring when a number of blooming plants are nicely arranged among a variety of others in a conservatory. Even when not in bloom the pleasing foliage has a happy effect, mixed with other plants; also, it is of easy growth. It can be grown in a 12-inch pot, placing three or four plants in a pot, or, individually, in smaller ones. The greatest care required during its growing season is to have it plentifully supplied with moisture; and as it is a gross feeder, it should occasionally have some liquid manure. As soon as the pots get filled with roots, they should be set in saucers of water, with a little manure in them as well, and be kept in them while flowering, so that the spadix and foliage may attain a full and fine development. By the commencement of summer, the flowering season should have ended. Then the plants should be allowed to dry off gradually, under the influence of the sun, for the space of two or three months, so that the roots may get well ripened. Early in autumn they should be shaken out of the pots, removing all the small stems, and saving only the larger ones for potting as occasion may require. When

They have been thus prepared, they may be potted singly or otherwise, as before mentioned. A compost of decomposed turfy loam, with a good portion of cow-dung and a little sand, will be found to answer well. Before they have been potted, they may be removed to a frame or pit to be gradually kept moving in growth till the season of flowering comes again in the early spring. The *Richardia* should not be potted too firmly, and care should be taken to have the plants secured from injury by frost. If it is required to bloom earlier than usual, it may be subjected to a gentle heat.

Although the *Richardia* is a plant that does admirably well as I have described, yet, treated as a conservatory plant, it is a subject that will stand a variety of usage. I have seen it growing beautifully in the great conservatory of Chatsworth, which is kept as a tropical house, in a piece of water imitating part of a quiet natural rivulet. All the year round it seemed to be without its season of rest, throwing up its grand snow-white flowers in midwinter. In addition, it is a very worthy subject for window cultivation—a department of gardening now receiving some merited attention at the hands of the ablest horticultural writers.

R. M.



THOUGHTS ABOUT GRAPE-GROWING.

We are so accustomed at this period to hear it stated that preconceived ideas of every kind are being sifted for the purpose of ascertaining the amount of truth and fallacy contained in them, that it seems a mere truism to apply the same remarks to the discussions which have lately taken place in the gardening periodicals upon Vine Culture. In what is confessedly an age of transition, it is incumbent upon those who really desire improvement to see that what was good in former systems is not rashly cast aside, though some deficiencies may have become apparent.

Amateur cultivators, who look mainly to these publications for cultural directions, must be greatly distracted by the extreme diversity of opinion which exists among those whose names deservedly rank high in the gardening world. It also must many young practitioners like myself, who are anxiously striving to keep their qualifications apace with the progress both of science and practice, be puzzled to account for the apparently endless variety of opinions and methods of cultivation prevalent among practical men. Experienced Grape-growers have no results of their practice by which to test the new theories advanced. Young practitioners, seeking a knowledge of the best and surest method, are bewildered when they see accredited systems of culture openly censured or covertly undermined.

Amid this chaos of opinion, the article on Grape-Growing in your April Number must have been hailed with intense satisfaction by a large number of your readers, especially as it is so difficult, from the one-sided intimations and incomplete details which are too frequently given in articles on special cultivation, to

discriminate accurately between the merits of particular systems and the principles involved in their application.

I am not sure I can furnish anything that has not already been presented in one shape or another, but my own experience has furnished a few facts which tend to corroborate the statements of "D. T." and others.

The question as to whether the presence of lime in the soil is injurious or beneficial to the roots of the Vine seems to be one of prime importance. Lime is so efficient an agent in disintegrating the turf, which is the main constituent of so many Vine-borders (and more especially when this is of an adhesive nature), and so effective in destroying the numerous larvæ which it frequently contains, that it would seriously affect the cultivation of the Vine in many districts where it is much used, if it were proved to be injurious to the roots. An instance bearing upon this point recently came under my own observation. In the gardens at present under my charge, a Vine-border was laid down some five or six years ago, composed of the parings of roadside ditches—a generous and friable material. This was still further enriched by being saturated with blood at the shambles, and to insure porosity, a quantity of lime hot or newly slaked (which I presume to be the caustic state alluded to by Mr Cramb) was applied, but, as the result showed, very partially.

For three years the Vines thrived and bore well, but during the two succeeding years the fruit shrank considerably, although in all other respects the Vines appeared to be in excellent health. Last year it was resolved to remove the vinery and erect one larger on the same site. On lifting the Vines with the intention of replanting them in the new house, it was found that the compost had become so solidified as to be almost impervious to the roots; but here and there throughout the border were patches where the unslaked lime was found in lumps, and these were thoroughly matted with fine healthy rootlets. One or two roots had made their way through the border into a walk composed of furnace ashes and beach gravel, and were found spreading in every direction. The conclusion drawn from the appearance of the border was, that the lime had preserved the lives of the Vines by preserving a few spots of penetrable soil in the border through which the roots could operate. In a less retentive soil, I do not suppose that its action would have been so helpful, unless with copious and frequent applications of water. The ultimate shanking of the fruit I attribute to the exhaustion of the extremely limited space in the border to which the roots found access.

With reference to the dispute upon the relative merits of the restrictive and extension systems of Vine-growing, I would submit one question for consideration which I have not yet seen mooted. Under which of the two methods can the Vines be most speedily brought into their maximum bearing condition? I presume that there can be but one answer, and that in favour of the single-rod system, either for early forcing or ordinary culture. Under no other method can the Vine be said to be so completely under the control of the cultivator, as to the proportion of foliage and light, both matters of the first importance in successful cultivation.

The advocates of extension boast of the facility which their system affords for promoting a luxuriant development of roots, but I have failed to observe in all their speculations any gain which cannot also be obtained by the single rods spurred. With these, the greatest amount of foliage upon which light and heat can advantageously act may easily be produced. Whatever may be said in favour of allowing shoots of fruiting Vines to ramble unrestricted with the view of encouraging root-growth, I confess I have but little faith in the fruit-producing powers of either roots or canes of such crude growths. The system which most

ally maintains the balance between root and branch, must in the end prove the highest advantage in cultivation.

It must also be allowed that system is worthy of general acceptance which yields the most satisfying results from the confined space necessarily contained within the borders of artificial construction, for under such a condition an immense majority of Vines must exist. There can be little doubt that Vines under the restrictive system may attain a very respectable longevity, provided that a sufficient quantity of nutritious food be furnished them. "Quodcunque gratum est esto nutrit," is an old maxim which may be applied with advantage in rearing specimens of the genus *Vitis* as well as the genus *Homo*.

I wished to have made a few remarks upon the "cowhorn" system of pruning, but "D. T." not inaptly terms it. I consider it a hybrid between extension and friction, with some of the disadvantages of both, and with the merits of neither; but I have trespassed already too long on your patience, and must beg leave to recur to it at another time.

A YOUNG PRACTICAL GARDENER.



THE WINTER TERRACE-GARDEN AT WOODSTOCK.

On page 240 of the May No. of 'The Gardener' you state, "The winter terrace-garden at Woodstock is the most unique thing of the sort in the three kingdoms." (and doubtless many other amateur gardeners) would be gratified by a description of this garden. Indeed, the terrace-garden is not sufficiently appreciated by gardeners; for it should, wherever practicable, form a leading feature in all properly-laid-out gardens, inasmuch as it becomes, where judiciously placed, a part both of the architecture of the house and a part of the garden,—connecting them in a suitable manner, and forming a harmonious arrangement, which can *only* be effected satisfactorily where masonry and formal planting can be employed. Few subjects are worse understood than the principles which should guide us in laying out flower-gardens near country residences; and if the terrace-garden you allude to is (and doubtless it is) so admirably placed and well arranged, you cannot probably further good gardening more than by a description which will alike benefit myself and other amateurs, and call deserved admiration to the skill and taste of the late Woodstock gardener, Mr M'Donald.

HOYLE.

W. J. RAWLINGS.

[From the columns of our excellent Irish contemporary, 'The Gardener's Record,' we obtain the following description of the winter terrace-garden at Woodstock, and trust it will meet the wishes of our correspondent.—EDS.]

"In designing the winter-garden, Mr M'Donald had a distinct eye to the fitness of things; nothing so fit, certainly, on that particular spot as a winter-garden: and the design and execution of this one at Woodstock deserve the highest credit. The idea was to put something beside the house that would be artistic, and yet harmonious with the surrounding landscape. This has been done, and successfully done.

"The winter-garden is perfectly square, and perfectly level. To make the ground level was no small undertaking. The whole of Woodstock, be it remembered, is a sloping hill; many thousands of cartloads of earth had, therefore, to

be carted to bring the site of the winter garden flat. It is supported on two sides—the side next the river and that farthest from the house—by a retaining wall of granite. The wall accomplishes another thing besides supporting the garden, it joins it on to the house. The garden thus, as it were, forms part and parcel of the house. The wall is surmounted at intervals by balls and vases of granite, the whole work executed by native workmen; and very creditably executed it is. The vases and coping of the wall are beautifully cut.

“The garden is intersected by two gravel-walks, 15 feet wide, thus cutting it into four quarters. From the house the garden is entered by a broad flight of highly ornamental metal steps. But to the eye these steps have the appearance of granite, being coated over with granite sand. One of the 15-foot walks runs straight down the centre of the garden from the steps to the retaining wall. The side of the garden farthest from the river joins on to the arboretum already mentioned by a sloping grass terrace. The other intersecting walk, from the retaining wall next the river, ascends the terrace by means of a flight of granite steps, and is carried straight up the sloping bank for about 100 yards, when it is stopped by a huge tree and a seat. Thus, while the winter-garden is kept a very distinct design, it is joined easily and naturally on to the other grounds.

“The four quarters of the garden are each a sunk panel 20 inches below the general surface of the ground. The space between the panels and intersecting walks is a carpet of smooth grass; in fact, the panels are set in a framework of grass. These 15-foot walks are the perfection of walk-making. They feel under the feet almost like a carpet; they are just sufficiently raised in the centre to throw off the water; their surface is covered with a thin coating of washed sand; and they are as smooth as if a carpenter’s plane had been over them. The comfort afforded by walks like these, especially in winter, can be best appreciated by those who have not enjoyed the luxury of a well-made walk.

“To come now to a description of the panels. All the minutiae and details cannot here be given without a plan. Perhaps a *general* idea may be given in words. The area of each panel is a scroll-work of shrubs resting on gravel. We see in these panels what fine results can be obtained from shrubs and shrublike plants without the help of flowers. The panels are worked out in two distinct designs or patterns; the two next the house are one pattern; the two farthest from the house are another; but there is a unity of design in all four. *Unity*, not *uniformity*. But how is this effected? By the disposition, size, and colour of the plants. Much skill and practical acquaintance with the habits of the different plants employed are necessary to bring out a pleasing result in work of this kind. Of the thousands of plants employed, any one of them misplaced, as regards shape, colours, or size, would be incongruous, and mar the beauty of the whole. There is almost every shade of colour from the darkest deepest green to the lightest silvery grey. Then, as regards the size of the plants, the lowest are 6 inches, the highest 6 feet, with every intermediate size.

“The outlines of the scroll-work are formed of low hedges, about 18 inches high and as much broad, of various kinds of shrubs. One of these is the common Portugal Laurel, than which, for this kind of work, nothing can be better. Lauristinus, Common Yew, and so forth, are also used. But these low hedges are edged with Box 6 inches high and 6 inches broad, thus relieving and lightening the higher hedge. The filling up of the scrolls is managed with much artistic skill, the object being to have a variety of colour as well as height. For silver grey the Lavender-Cotton is much used. Nothing can look prettier than low masses of this small-leaved plant. *Aucuba Japonica*

also answers well ; so does the Alexandrian Laurel and common Butcher's Broom. It is needless to name all the plants that are worked into these scrolls ; suffice it to say that they are full and well done. In the panels next the house, Shamrocks are worked in Box, very appropriate and very pretty.

"But the scroll-work, however cleverly designed and filled with dwarf plants, would be tame without the tall ones. There is in the scrolls a carpeting of many colours, but if there were no tall plants the winter-garden would be something like an elegant room carpeted to perfection, but destitute of furniture. The tall plants are indispensable to the winter-garden. They consist chiefly of Yews and some of the finer Cupressus. Particularly beautiful are some specimens of *C. elegans* and *Thuja Nepalensis*, with various Red Cedars. In the centre of each of the panels next the house is a statuette on a pedestal, representing some out-of-the-way human beings of a negro-looking type. We agree with Mr M'Donald that statues of Goldsmith and Moore would be better. Near the river end of the intersecting walk is a handsome sun-dial, on a pedestal of Cork marble. The small walks in the scroll are filled with various-coloured gravel.

"We see in this garden how much can be done with shrubs and plants of a shrubby character. As a *winter-garden* this is a gem. The general impression that it leaves on the mind is that of richness. The walls, the terraces, the walks, the panels, the plants combined, form a picture of rare beauty. It reflects credit alike on the proprietor and the gardener."



A COTTAGER'S MODE OF CULTIVATING MIGNONETTE.

I HOPE you will permit me to make a few remarks for the benefit of those of my own class that have no garden. To these I say, Make the best use you can of your windows. This is already being done quite extensively in the case of the more tasteful dwellings of many of the working classes ; and to those who object to attempt anything of the kind on the ground of want of skill as cultivators, I say, A careful and regular attendance is much more requisite than a scientific knowledge, though both are very essential to the successful florist.

A few hints on the culture of Mignonette as a window-plant may be of service to those of my own class who are among the readers of this work. The end of April is the best time to sow the seed. As it is intended that the plant to be raised should last for a considerable time, it is essential to lay a good foundation in the preparation of the soil. It should be a rich compost ; one-third cow-dung that is dry enough to crumble to small pieces, more than one-third of good mellow loam, and the remainder silver sand, with a handful of old lime-mortar dust, to keep the compost open. Having prepared the soil and provided the seed (that known as the large flowering Mignonette is the best), then take as many pots, from 3 to 4 inches in diameter, as will be required, place at the bottom of each for drainage a few small pieces of

broken pots, and over that a little of the roughest of the soil; then **6** up nearly to the top of the pot; place three seeds in the centre of each pot, cover them slightly with earth, press it down rather firmly, and place the pots in the window. In ten days the young plants should be pushing through the soil, and as soon as they appear above ground plenty of air should be given them. When the weather is fine, the pots should be placed outside the window during the sunniest part of the day, and a gentle shower occasionally given them from a rose watering-pot if the weather be hot and dry; if dull, a slight watering the first thing in the morning will be found sufficient. When the plants are large enough, pull out the two weakest ones, and leave the strongest, as this is to form the future tree. As it makes growth, place a neat stick by the side of the plant, about a foot in length, tie it loosely to this stick with a piece of fine matting, and do so as it increases in height, and reaches the top of the stick, then replace it with a longer one, if a long stem be desired; that, however, is a matter of taste merely.

As soon as side-branches break forth from the stem of the plant, slip them back to the second eye; but avoid what some persons are apt to do who do not appear to value the leaves, cutting the side-branches back to the main stem. A naked, leafless trunk is scarcely in taste, therefore leave as many leaves about it as possible the first year, so that the stem may have a feathered appearance.

And now comes the winter, during which the plants may be kept pretty dry till they make young growth, when more than one-half of the side-spurs should be cut away, beginning at the bottom, and only taking off a pair at a time, and doing the same at intervals of a fortnight. During the first year no bloom should be permitted to appear on the trees; the second year they should be allowed to bear flowers after the middle of October, and all through the winter; but up to that time all flowering-buds should be plucked off as fast as they appear.

About midsummer shift the plants into a 5-inch pot, and give them another and rather larger shift about the end of July, but never shift the plants after August, as it would check them, and perhaps destroy all one's hopes of what they might do in the future.

J. C.



SOMETHING ABOUT THE HYACINTH AS A BEDDING PLANT.

SPRING flower-gardening is not attempted here to any great extent, but still some of the most prominent flower-beds are filled with bulbs in the autumn, when their summer beauty has passed away.

Foremost among these bulbs receiving attention is the Hyacinth; one bed—a circular one—is filled with the largest bulbs, planted in rings 9 inches apart, the bulbs being planted about 6 inches deep. The soil undergoes no preparation for the Hyacinths, as it is made quite rich enough with leaf-mould when the summer planting takes place; and as the subsoil in the flower-garden here is sand, they have a soil suitable to their wellbeing, otherwise I should mix some sand with the soil when I plant, as I believe bulbs of all kinds for winter planting require it. I never protect the Hyacinth at all from the time they are planted till they are taken up, and the same bulbs have been planted for several years, and a most charming bed they make. As the offsets increase rapidly, I have this year used the smaller ones for an edging for two large beds filled with early Tulips, and Narcissi both single and double.

Were it more generally known that the Hyacinth is so valuable a plant for outdoor decoration, the bulbs would not be thrown to the rubbish heap, as is often the case, after blooming in pots; instead of which they should be planted in a bed of light soil to perfect their growth, and when their foliage is quite ripe, the bulbs should be taken up and put into drawers or boxes till planting-time comes round in the autumn.

I trust what I have stated above may interest many of your amateur readers, and I will now give you an experience of fifteen years' gain by a real amateur (Mr Kidd), an officer of the Inland Revenue Department of the Government. Mr Kidd cultivates the Hyacinth in a villa garden at the front of his residence at Stanstead, Montfitchet, two miles from here, where I have seen them in bloom for the last three years. On the occasion of my last visit to Mr Kidd, on the 18th of April, there could be seen from eight to ten dozen Hyacinths in full bloom; and Mr Kidd informed me that he first began to grow his Hyacinths with three bulbs, one each of red, white, and blue colours; and now they consisted principally of these three colours, and he has scarcely bought a Hyacinth during this time, except a dozen of red ones this last autumn, having more white and blue flowers than red ones; and such a display as was then made was worth walking ten miles to see.

The bulbs were growing in a gravelly soil, and apparently a very

poor one ; still the Hyacinths, Crocuses, and Tulips, both early and late kinds, were in most luxuriant growth both as regards foliage and bloom.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



HORTICULTURAL EXHIBITIONS.

THE monthly record of shows commences with that held at South Kensington by the Royal Horticultural Society on the 20th of April. This one of the series of small but interesting bi-monthly exhibitions had Azaleas and Rhododendrons as the leading features. Generally the former were shown as nice, small, but well-flowered pyramid bushes, generally characterised by that formal stiffness of training so common with this class of plants. Mr Turner of Slough took the Nurseryman's prize for six plants, with some standard Azaleas, trained in the Belgian style, on stems about 2 feet in height. The varieties were Hercules, Alba striata, Madame Jean Vervaene, Hovibronkii, Antoinette, and Marie Vervaene. The best specimen Azalea—Sir Charles Napier—came from Mr Wilkie, Addison Road, Kensington ; the next best was Flower of the Day, from Mr Turner. Messrs Lane & Sons had the best collection of Rhododendrons in pots ; Messrs Standish & Co. came next with some seedlings.

Mr Turner had, as might have been expected, the best twelve Auriculas ; they comprised the following self-flowers, Master Hole, Bishop of Lichfield, Eliza, Crown Prince, and Prince Alfred ; and of green, grey, and white edged flowers, the following, Galatea, Earl of Shaftesbury, Exhibitor, Stapleford Hero, Buckstone, Admiral Napier, and Colonel Champneys. Mr James of Isleworth had the best six in the amateurs' class, including Meteor Flag and Mrs Smith, self-flowers ; and of the other divisions, Conqueror of Europe, Lovely Ann, Bright Phœbus, and Ne plus ultra. Mr Turner's group of twelve Alpine Auriculas were admired much more than what are termed the show flowers, and made a very effective display. The advance made in the improvement in the Alpine Auricula by Mr Turner and others, during the last few years, was manifested in this fine group, all seedlings of Mr Turner's. Mr James of Isleworth had the first prize for nine Pansies in pots, which were excellently grown and bloomed ; and consisted of Novgorod, Rev. H. Dombrain, Sunset, and Queen of England, self-flowers ; J. B. Downie, Chancellor, and Dr Smith, yellow grounds ; and Isa Craig and Princess Helena, white grounds.

As is usually the case, the miscellaneous groups of plants made up by far the largest portion of the exhibition. The collections of Orchids exhibited by Mr Demning, gardener to Lord Londesborough, contained a noble specimen of the purple variety of Cattleya Skinneri, with ten fine spikes of flowers ; Dendrobium Jenkinsii, with pale buff flowers, edged with yellow ; and Odontoglossum hystrix, very handsome—to each of which special certificates were awarded. In a group from Messrs Veitch & Sons was a specimen of Oncidium sarcodes, with a spike of flowers 6 feet in length—awarded a special certificate ; Odontoglossum Phalaenopsis, a fine specimen of Anthurium Scherzerianum, &c. Equally attractive was a fine group of plants from Mr B. S. Williams, and similar groups came from Messrs Rollisson & Sons, Tooting, and Mr J. W. Wimsett, King's Road, Chelsea, inclusive of six large and well-bloomed plants of the new hybrid Ivy-leaved Pelar-

Conium Wilsii. Mr May, gardener to Lady Ashburton, Melchet Court, Romsey, sent two splendid spikes of *Phalænopsis Schilleriana*, to which a special certificate was awarded.

ROYAL HORTICULTURAL SOCIETY, May 4.—This show had as its leading feature Roses and Auriculas. Of the former, the best nine in pots were furnished by Messrs Paul & Son, having Anna Alexieff, Vicomte Vigier, Camille Bernardin, and Marechal Vaillant, Hybrid Perpetuals; and of Bourbon, Noisette, and Tea Roses, Madame Villermoz, Charles Lawson, President, Celine Forestier, and Madame Margottin. The best collection of twelve Roses of 1867-68-69 came from Mr Turner, who had Duke of Edinburgh, very fine; Henri Lidechaux, bright rose, very fine; Madame la Baronne de Rothschild, pale rose, very fine; Marie Ducher, Madame Creyton, Madame Alice Dureaux, Clotilde Rolland, light pink, very good; Reine du Midi, Adrienne Christophle, a copper-coloured Tea Rose of good quality; Madame Clert, Dupuy Jamin, and Miss Ingram. A collection of Roses in pots from Messrs Veitch & Sons was the feature of the show; they were remarkably well grown and flowered, and made a charming display. The specimens shown by amateur cultivators were of somewhat poor quality.

As on the last occasion, the exhibition of Auriculas was confined to Messrs Turner and James. Mr Turner was first with twelve varieties, and Mr James with six varieties; the former had Exhibitor, Colonel Champneys, Omega, a good, new, white-edged flower; Miss Giddings, Sophia (Chapman), Stapleford Hero, General Leill, Richard Headley, a very fine grey-edged flower; Galatea, Earl of Shaftesbury, and Lancashire Hero: Mr James's flowers consisted of Superb, Conqueror of Europe, Duke of Cambridge, True Briton, Lovely Ann, and Alma. Mr James again staged a very fine lot of Alpine Auriculas, some of superb quality, and highly coloured.

Groups of plants were again plentifully produced. One of the most interesting was a collection of hardy plants in flower, as well as hardy plants with ornamental and variegated foliage, comprising some capital things of considerable merit.

At both the foregoing exhibitions the contributions of fruit and vegetables contained nothing calling for special remark.

ROYAL HORTICULTURAL SOCIETY, May 18.—Ericas were a leading feature of the show, and they made a very nice display, being also somewhat plentifully produced. The leading varieties were Lindleyana, Ventricosa coccinea minor, Eximea superba, Mutabilis, Ventricosa grandiflora, Ventricosa magnifica, Victoria, Sandolleana, and Aristata superba. Of the zonal Pelargoniums staged in this occasion but little can be said in their praise, trained as they were to flat wire-rellisses. In the nurseryman's class, Messrs Downie, Laird, & Laing were first with six nice plants, consisting of Sultan, Comet, Countess of Strathmore, Ladies' Pet, Rose Stella, and Duchess of Sutherland, all good and showy nosegay varieties. Show Pelargoniums were pretty numerous, and fairly done; the six Fancy Pelargoniums exhibited by Mr Winsor, gardener to J. R. Ravenhill, Esq., were remarkably fine—perhaps as fine as were ever before exhibited; they were Mrs Ford, Lady Craven, Madame Sainton Dolby, Godfrey Turner, Roi des Fantaisies, and Ellen Beck. The best three double Pelargoniums came from Messrs Bell & Thorpe, Stratford-on-Avon, and consisted of Gloire de Nancy, Hector, and Madame Lemoine. The next best were Wilhelm Pfitzer, Marie Lemoine, and Lerveille de Lorraine, and came from Messrs Standish & Co. Decidedly the best were Gloire de Nancy, Wilhelm Pfitzer, Madame Lemoine, and Marie Lemoine.

A group of beautiful new early-blooming hardy Clematises was staged by Mr

Charles Noble, Bagshot. Such varieties as Lord and Lady Londesborough, Miss Bateman, &c., are fine acquisitions. Mr Turner sent a collection of out Tulips, very bright and gaudy-looking; Messrs G. G. Henderson & Sons, a pan of the pretty Hoop Petticoat Narciss (Narcissus Bulbocodium); and among the Orchids staged by Lord Londesborough and others were very fine examples of Cattleya Wagneri, Trichopilia crispa, of which there was shown both a beautiful dark as well as a very pale variety; Dendrobium Dalhousianum, Oncidium crispum, Vanda Denisoniana, Lælia purpurata, &c.

A good collection of fruit was staged by Mr Miles, gardener to Lord Carington, Wycombe Abbey, which included Enville and Queen Pines, Black Hamburg and Chaouch Grapes, two dishes of Cherries, two Melons, and Brown Ischia Figs, a most commendable lot. Messrs Standish & Co. exhibited three bunches of Royal Ascot Grapes, of fine quality, and covered with a delightful bloom; three of Muscat of Alexandria, quite as good, every way highly commendable. From Mr W. Gardiner, Eatington Park, came the following Apples, all in a high state of preservation: French Crab, Sturmer Pippin, Reinette du Canada, Mère Ménage, Royal Russet, Dumelon's Seedling, Rymer, and Hanwell Souring.

REVIEWS.

A BOOK ABOUT ROSES: HOW TO GROW AND SHOW THEM. By S. Reynolds Hole. Second Edition. William Blackwood and Sons, Edinburgh and London.

No one will be surprised that this rich, racy, invigorating, pleasure-giving book has passed into a Second Edition. The Author has retouched and amended some portions of it, and added a postscript to Appendix No. 2, wherein he describes and comments on the new Roses to be sent out during the present season. This is an addition of importance, as it brings down the record of new flowers to the present time.

The matter and manner of the book who shall arraign? Any set criticism on such a work would only result in the critic becoming convulsed with laughter, and then aghast at his own temerity. But we stumble on two typographical errors, and manage to find courage enough to exhibit them. We have no set pugilistic tastes—we cannot claim to be well up in the pages of 'Fistiana,' and would much rather read Mill than witness a "mill." But when even a pugilist achieves immortality (*sic*), the least we can desire is that his name be spelt correctly; and so we hope when our author revises a third edition he will substitute Langham for Langan on page 13; on page 201, The Rev. R. Fellowes, Shottesham, should read The Rev. C. Fellowes. That worthy amateur florist has raised so many fine Dahlias, besides growing lovely Roses, that it were a pity he were not in a niche of the temple of fame inscribed on that page of Mr Hole's book.

It is a book not for Florists merely, but for everybody—the work of a true cosmopolitan—a man with a genial loving heart, and broad, generous sympathies: such men are at once the glory and the boast of Floriculture.

PRIZE ESSAYS ON COTTAGE GARDENING AND WINDOW GARDENING. Printed for the Royal Horticultural Society, South Kensington.

This is a neat little pamphlet of 36 pages, containing the two prize Essays which gained the prizes, offered by Mr W. Egerton Hubbard, and has been printed by the Royal Horticultural Society, for circulation among those for whose especial benefit they have been written. Both are indited in a popular manner, can be

easily apprehended, and what is advanced is generally within the means of the cottager class. In this respect they present a marked contrast to one at least of the Essays on Window Gardening that was highly commended by the judges. It was so technically and painfully elaborate, that to apply the arrangements and suggestions recommended in it would not only require the whole of the windows in Grosvenor Square to give effect to them, but also a considerable deal of the resources belonging to the denizens of that aristocratic quarter. Clergymen and others, as well as country Horticultural Societies, would do well to obtain copies for gratuitous distribution.



BOOKS RECEIVED.

THE GARDENER'S MAGAZINE for May; also THE FOOD JOURNAL for May—both as full of interesting details as heretofore.



NOTES AND QUERIES.

ERRATUM.—In May number, page 237, line 1, for "*Lassianthus Russelliana*," read "*Lisianthus Russellianus*."

NICOTIANA WIGANDIODES.—I have just seen some flowering specimens of this fine Tobacco, and can recommend it as a good conservatory plant. The plants had been taken from the open ground in the autumn, and placed in large pots, and they are now bearing huge branching panicles of pale cream-coloured flowers of considerable value as decorative agents. Apart, therefore, from the value of this fine Tobacco as a foliaged plant in subtropical gardens, it can also be estimated for its flowers, which it will produce in a cool conservatory during the months of March, April, and May. B. C.

SAUNDERS' DARK WALLFLOWER.—I am much disappointed with this reputed fine strain, of Wallflowers. The flowers are not dark, but of a brownish orange hue, and not near so dense in colour as common strains of the Wallflower growing in the same garden. A small packet of it cost me one shilling—a price large enough to have insured something good. Y. S., LEICESTER.

[Has the cold dry weather affected the colour of the flowers?—EDS.]

The Council of the Royal Horticultural Society have elected Lord H. Gordon Lennox, M.P., to serve on the Council in place of the late Gen. Hon. C. Grey, and His Grace the President has nominated his lordship one of the Vice-presidents of the Society for the current year.

TOBACCO-CLOTH (R. B.)—By Tobacco-cloth we understand rags steeped in Tobacco-juice: this will do as well as anything else for fumigating, but as it is generally stronger (and dearer) than the ordinary Tobacco-paper, some care must be exercised in using it.

SPIREA PALMATA (INQUIRER).—Mr Charles Noble, Nurseryman, Bagshot, Surrey, is distributing it, but you may obtain it through any nurseryman.

NAME OF PLANTS (A FORESTER).—The double-white grove Anemone (*Anemone nemorosa flore pleno*).

PHLOX VERNA.—I have a large batch of this in full bloom at the present moment, and am much pleased with it. Though said to be old, yet I have only

this season met with it for the first time. I suppose it can best be propagated by root division? (Yes). And is it quite hardy? (Yes). In Mr W. Robinson's book on Alpine Flowers it is classed as *P. reptans*, or the Creeping Pink. It is also known as *P. stolonifera*.—SUBSCRIBER.

SEEDLING AURICULAS (A. VEAL).—No 1. An alpine variety, with golden pastels and smooth dark-blue edge; No. 2. A self variety, with white paste and smooth dark margin; both promising.

RAVAGES OF VERMIN.—Under the initials of "K. Y." a correspondent writes:—"I am suffering in a great degree—i.e., my Peas—from a vigorous attack of *Curculionis* and *C. macularius*; and I shall be glad if you will tell me in your next number how to exterminate the 'varmints.' I have already given a liberal dressing of soot and lime, but with no effect; and, as a last resource, I burnt about 50 yards of Peas when the little nuisances were hard at work near midnight." One person to whom this inquiry was submitted states, "I have always found a good dressing of hot lime and soot will have the desired effect; it makes the leaves so bitter that they will not attack them." Another advocate diverting their attention to something even more palatable as a means of drawing them away from devouring the Peas. He states, "Peas are not the natural food of the weevil; it is an acquired taste. Put slices of beetroot or carrot in their way; succulent roots are sure to prove too tempting to be passed by. The weevils hide by day, and work by night; therefore place pieces of boards near the lines of Peas, as hiding-places by day, and on these place the food provided for them. When I find ants attacking my fruits, I often put sugar in their way; it spoils their taste for acids, and they leave the fruits alone." We are sorry a delay we could not avoid prevented this from appearing in our last number.

Hot Water may be employed for the destruction of the insects that most commonly infest plants. The few experiments made have been attended with such promising results that we shall hope to find opportunity soon for repeating them in a more extended and systematic manner. For the present we shall speak of aphids only, and as that is the most prevalent of plant-pests, we trust these remarks will be useful to many readers. It appears, then, that aphides quickly perish if immersed in water heated to 120° Fahr. We obtained from various sources plants infested with green-fly, and cleansed them all by the simple process of dipping. As the experiments were made in the month of February, we thought it probable that aphids might endure in June a temperature many degrees higher than that which proved fatal to them in the earlier and colder season. Hence it became desirable to ascertain the degree of heat the plants could endure in the dipping process. A number of herbaceous and soft-wooded plants were therefore subjected to the process of immersion in water heated to various degrees above 120°. We found that Fuchsias were unharmed at 140°, but at 150° the young leaves were slightly injured. Calceolarias suffered at 140°, but the plants were not killed, though their soft tops perished. Pelargoniums were unhurt up to 150°, but the slightest rise beyond that figure killed the soft wood and the young leaves completely. Chinese Primulas were injured by any rise beyond 140°, and this at last proved to be the most general maximum, and may be cited as a rule for observance. Centaureas, Sedums, Saxifragas, Thysanotus, Justicias, Ferns, Heliotropes, Petunias, Begonias, Mignonette, and many other plants of soft texture, were unhurt by being dipped in water at 140°, but the slightest rise beyond that point was followed by blackening of the leaves, and consequent disfigurement of the plant, and at 150° the process of killing commenced.—*The Gardener's Magazine*.

EARLY GREEN PEAS.—On Tuesday the 10th, Mr George Green, gardener to the Venerable Archdeacon Fitzgerald, of Charton Mackrell, near Somerton, Somerset, gathered from the rectory garden his first dish of green Peas for this season, grown in the open border, their only shelter having been the garden wall. This season being generally pronounced late, the 10th of May will be considered extremely early for green Peas. They were sown on the 22d of last November. Cobbett gives (in his 'Gardener's Guide') the 4th of June as very good work for Peas in the open border. "In the old garden at Brympton d'Everecy, when I lived there as a boy, we used to get them about the end of May, which was considered very early for outdoor Peas." The beautiful rain which we have had has caused great progress in the crops here. Under Rendall's ground vineries I have Strawberries nearly ripe; they were turned out of the pots and planted in the ground on the 1st of March. Every villa garden ought to have them, the vineries being so cheap, and easily put up.—T. S., HERMESTON HOUSE, YEOVIL.

TREATMENT OF PELARGONIUMS, FUCHSIAS, AND CALCEOLARIAS FOR EXHIBITION.—I have plants of Calceolarias, Pelargoniums, Geraniums, and Fuchsias, which I want to exhibit at a horticultural show the last week in August. The Pelargoniums and Fuchsias are in 8-inch pots, the Calceolarias in 5-inch pots. I wish to know if I am to go on repotting the plants, and stopping the shoots, so as to have a good show of bloom at the right time? And will you state how many weeks before the show I must allow the plants to bloom? whether you think the blooming of each plant can be deferred till the time at which they are to be exhibited? and also, if a cold frame is the proper place in which to keep the plants till they are wanted for show?

ANNIE MARRIS.

[Pelargoniums, both show and fancy kinds, if they have not been stopped recently, may have the points of the shoots pinched out at once, tying out the shoots into shape, and keeping the plants well supplied with water, so as to have them in bloom by the end of August. Let them remain in 8-inch pots, for it is a great mistake to over-pot them, as too much pot-room results in a superabundance of foliage and too little flower. If, however, the plants are now "pot-bound"—that is, very full of roots—the plants may be shifted into the next-sized pots, taking care that the pots are not much larger; but do not do this unless you fear the foliage may turn yellow for want of pot-room before the end of August. Rather place your plants in pans, with a little moss and manure in them, so that the plants may root through into the pans, and moisture be retained at the roots. Pick off the blooms at present, and keep the plants both growing and shaded from the sun; and about a month or five weeks before the day of exhibition, according to the appearance of the buds, place the plants close to the glass, exposed to air and light, but keeping up a supply of water. A little thoughtful attention then will soon lead you to form an opinion whether you will hit the right time. You cannot do better than adopt a similar plan for zonal Pelargoniums (what you term Geraniums). If you are growing Tricolor and Bronze variegated Pelargoniums, do not over-pot them, but keep them close to the glass, well watered, and well ventilated, in order to get growth and colour in the leaves. If you want large specimen Fuchsias, re-pot into 10 or 12 inch pots at once. Grow these on in a shaded moist house or deep pit, syringing often, and stopping them until the middle of June; then push them on into growth, and, as soon as the buds form, gradually harden them off for the exhibition, and, say, for three weeks before, expose them to plenty of light, with adequate ventilation, to get size and colour of bloom. Use weak manure-water or Standen's manure for them, and see that the plants get plenty of water.]

Your Calceolarias (we presume they are shrubby kinds) may be re-potted once into 8-inch pots, and treat them like Pelargoniums, taking especial care keep them growing freely and free from green-fly.

You can grow the Pelargoniums and Calceolarias in a cold frame; the Fuchsias as directed.]

CULTIVATION OF THE MUSK PLANT.—The Musk (*Mimulus moschatus*) is such a universal favourite, that one is often surprised pains are not taken to make it much more attractive in form than is usually seen, instead of its being allowed to grow weakly and straggling, and of a kind of consumptive appearance. It is really capable, with some assistance, of doing much more than people appear to imagine. The roots of Musk, like those of the common herb Mint, run under the surface of the soil, which, by continued watering, loses the nourishment so essential to the plant. Cuttings, as a general rule, make much better plants than those obtained by a division of the roots; and cuttings strike easily enough if taken early and placed in pots. To grow the Musk finely, a vigorous young cutting, well rooted, should be taken and planted in some soil, about 4 inches deep, in a flower-pot that would hold half a peck, and then placed in the warmest part of the greenhouse, where it will grow rapidly. As the plant makes growth, the leading shoot should be pinched out, to induce the plant to make side growth; and as this growth develops, more soil should be added, until the pot is filled to within an inch of the top: by this time the pot is well filled with roots that have struck out from all parts of the plant thus buried, hence it grows more vigorously than when it has only a few roots running under the surface. A number of neatly-cut sticks should now be placed some 10 inches apart all round the edge of the pot, and be drawn and tied together at the top, thus forming a cone about 18 inches high above the rim. Some fine matting or bast should then be passed round each stick, commencing at the bottom; and as the plant continues to grow, place the bands round it to keep the foliage inside. As the flowers make their appearance they should be pinched off, until the plant has quite filled the space enclosed by the sticks, which will not occupy long, for the plant at this stage may almost be seen to grow, and then it should be allowed to bloom at will. A frequent turning of the pot will prevent the foliage from being drawn on one side by the light. The shoots that find their way forth through the sticks can be allowed to fall down round the pot, which will soon be almost invisible. The whole presents the appearance of a floral pillar, about 2 feet in height, covered with flowers of a larger size than those generally seen in the Musk plant, and no stick of its support visible. By this time it requires a little assistance with manure-water, not too strong. Frequent syringings of the plant with water is of great and essential service.

FERN CULTURE (J. S.)—Mr B. S. Williams's 'Select Ferns and Lychnis' is the best book we have on the culture of Ferns in general, and contains descriptions of all the best sorts, from which you can readily make a selection. The price of the book is 5s., and it can be obtained from any bookseller.

For the purpose you name—i.e., greenhouse culture in 48 (5-inch) square dinner-table—you will find the following sorts good:—*Lomaria Gibbula*, *Pteris cretica albo-lineata*, *Lastrea filix-mas cristata*, *Gleichenia Asplenium bulbiferum*, *Asplenium Fabianum*, *Adiantum hispidulum formosum*.

THE GARDENER.

JULY 1870.



A PLEA FOR HARDY HERBACEOUS PLANTS.



IF there is one aspect of gardening more than another that stands out prominently in the present day, it is this—that many of the fine old hardy perennials and biennials, with others not quite hardy, yet not difficult of management, are slowly but surely rising in popular favour, and that they will ere long be eagerly sought for the decoration of the flower-garden. It is equally certain that the rage for “bedding out,” in so far as it is pictured as glowing masses of scarlet and crimson, rose and blue, yellow and white, or in long ribbon-lines composed of these and other shades of colour, differently arranged, with little to relieve the glare or tone down the most pronounced hues, is gradually expending itself, for the very monotony of its annual recurrence presages its decay. The partial employment of these gaudy-coloured flowers can become, by means of judicious grouping, a great aid in the decoration of the flower-garden; it is when they hold absolute sway, when nothing else but these glaring masses of colour is employed, that they become offensive and cease to be satisfying.

The large classes of hardy perennials and biennials supply numerous plants yielding beautiful, and in many instances highly fragrant, flowers of divers types; combined with many forms of leaf foliage that, even “uncrowned by flowers” even, are by no means unattractive of themselves. But in the past few years, during the arbitrary reign of somewhat diseased perception of beauty in the garden that failed to see much that is attractive in our fine old and many new herbaceous plants, they were ruthlessly thrust aside, as bereft of charms, and assigned only for some out-of-the-way place remote from the flower-garden.

We have lost much, very much, by this ; but we have gained an experience that will do much to exalt in the time to come the plants for which we now plead.

The mixed border, by bringing into its arrangement a little knowledge, and by the exercise of a little judicious care, can be made a kind of floral panorama the year through. There are so many flowers easily accessible, and as easily managed, that bloom at all seasons of the year, and at almost any one particular season, such a border can be so tinted with flowers as to be continuously bearing a cheerful appearance. The eye, satiated with staring masses of colour, turns with quick joy to such a border as this, when the full flower-harvest of the month of July crowns the summer with fruitfulness, and sees here a quiet and changeful beauty, so modest and unpretentious, and yet much more capable of satisfying the requirements of a true taste than yonder gaudy robe of many colours covering the breast of "Earth, our mother," and which we term "a flower-garden."

A glance at a list of perennials and biennials gives the following as among the most useful as decorative agents : those who know them intimately can fully appreciate the high floral service they are capable of rendering. An alphabetical arrangement gives us the fine dark blue *Aconitum Napellus*, the charming varieties of *Alstroemeria*, an exceedingly beautiful and profuse genus of tuberous-rooted plants of easy growth ; *Anemone japonica*, its pale variety of *hybrida*, and that beautiful pure white variety *Honorine Jobert*, all so useful for cutting from ; *Anthericum Liliastrum*, or St Bruno's Lily ; *Aquilegias*, or *Columbines*, especially the beautiful *A. glandulosa*, and the scarcely less attractive *A. Skinneri* and *A. cærulea* ; the blue *Baptisia Australis*, with its pretty pea-shaped flowers ; *Borago officinalis*, the common blue Borage ; *Campanula persicifolia*, both white and blue, and its fine varieties, *coronata cærulea* and *coronata alba* ; together with the varieties of *Campanula media*, better known as Canterbury Bella, among which the new and charming rose-coloured variety should have a place ; the old red-flowered *Centranthus ruber*, very hardy and of free habit ; the class of *Delphiniums*, one of the handsomest and most useful of all perennials, especially *D. Hendersoni* and *D. formosum*, the latter with an almost unapproachable rich hue of blue ; the fine and showy varieties of *Dianthus hybridus*, almost perpetual summer-bloomers ; *Dictamnus fraxinella*, both red and white, that so richly deserve a place in every garden, because both effective and fragrant ; the fine new spotted Foxgloves, showing a march of improvement almost unimaginable by those not conversant with it ; the fine and showy *Gaillardia Richardsoni*, one of the gayest ornaments for a summer flower-bed ; some of the early-blooming *Gladioli*, such as *G. Byzan-*

tinus and *G. Colvilli*; the double forms of *Hesperis matronalis*, better known as the double purple and double white Rockets, now masses of bloom; *Iris Germanica*, *I. Xiphoides*, or the English Iris; and *I. Xiphium*, or the Spanish Iris, of each of which there are many beautiful varieties, and all easily managed; the showy Tangier Pea, *Lathyrus Tingitanus*, and the equally useful *L. Lindleyanus*; *Liliums* of many kinds, all superb border-flowers; the double scarlet *Lychnis Chalcedonica*, the flesh-coloured Bastard Balm, *Melittis melissophyllum*, *Nierembergia frutescens*, growing in a hardy shrublike form; the yellow *Oenothera macrocarpa*, and the equally useful white *Oenothera taraxicifolia*; the beautiful blue Forget-me-not-like *Omphalodes verna*; *Pentstemons* in variety, most useful border plants, especially the pretty blue *P. Jeffreyanum*, and *P. (Chelone) barbatum splendens*; *Potentillas*, of which there are many showy kinds; *Prunella grandiflora* or *Pennsylvanica*, a very fine species; double *Pyrethrums*, of which we now have quite a wealth of fine showy varieties that are most valuable border-plants; *Scilla Peruviana* and its white variety; *Spireas*, *japonica*, *ulmaria flore pleno*, and *umbrosa*; *Stachys coccinea*, the autumn-flowering *Stenactis speciosa*; *Tritonia aurea*, *T. crocata*, and *T. rosea*, beautiful plants that richly deserve more general culture; *Veronica spicata*, and its white variety; the alpine *Violas*, *calcarata* and *cornuta*; *V. lutea* and its large-flowering varieties; and the fine *V. cornuta*, var. *Perfection*, of great size, and of a lustrous bluish mauve colour. The foregoing by no means exhaust the list; there are hundreds of others equally valuable and equally attractive, and as unfailing as they are numerous.

Perennials and biennials afford a greater and more pleasing variety of tints of colour than the lists of ordinary bedding plants; and in the fine hues of blue, so much needed under our present systems of bedding, perennials are singularly rich. As a general rule, they are easily obtainable, either by raising plants from seed, or by obtaining plants from a nursery, and when so obtained capable of almost indefinite extension; they by their beauty, by their pleasant service, and by their unbroken succession of bloom, assert their claim to a higher regard than they now receive, though we feel assured such a regard cannot be much longer withheld from them.

Already nurserymen and others are finding it to be their advantage to work up collections of these hardy plants. They are in demand, one of the best indications of their rising popularity; and when this popularity shall come—as come it will,—their use will revolutionise our system of bedding out with much positive gain. Moreover, these plants will be found to fit into, and both aid and supplement, what is known as spring gardening, now so much and deservedly followed:

labour will be lessened while the most desired results are at the same time augmented ; there need be no more naked beds during the winter and spring months where spring gardening is not followed ; and when it is, they will assist rather than prevent or retard it.



NOTES OF THE MONTH.

MANCHESTER has once more held its great Whitsun Show, and in doing so has demonstrated that in Cottonopolis there is no such thing as a decline in horticultural exhibitions to mourn over ; and so no doleful *miserere* comes from any one connected with its management. The 'Gardeners' Chronicle' spoke of it as "an exhibition of a first-rate character, equal, perhaps, on the whole, to any of the great exhibitions of ordinary years, metropolitan or provincial, and probably never surpassed, certainly very rarely equalled, except, indeed, at the International of 1866, in the elements of Orchids, which made a thoroughly magnificent display—so numerous were they, and of such generally excellent quality." The June Exhibition at Leeds, which opened on the same day, suffered somewhat, as Manchester did slightly, from the simple fact that it was impossible the same plants could be in two places at once ; but any little drawback of this character was amply compensated for in the fact that the amateur element about Leeds has this season asserted itself, and wrested from outsiders the prizes they have aforesometimes borne away out of the district. This speaks well for horticultural enterprise about Leeds, and is scarcely reconcilable with symptoms of decline. The great exhibitions held at the Crystal Palace in May and June, and the great Exhibitions of the Royal Botanical Society in the same months, have been warmly praised, as they deserve to be ; while the large Show of the Royal Horticultural Society, held on the 8th of June, was pronounced to be, by the highest authority, without question "the best show of the season." There were some grand specimen stove and greenhouse plants, some magnificent fine foliaged plants and superb Orchids shown on that occasion, but the former were crowded together in the hateful arcades, and half the beauty was lost in consequence. This does not look like a decline, and the throngs of visitors at each of these great shows indicated that the popular interest is as well sustained as ever.

So far, the parallel between the metropolitan and large provincial exhibitions holds good. Both have this season been of large extent and fine quality ; but here the parallel ceases. The promoters of the former complain that they cannot be made to pay ; or if they do pay, the

return falls short of what might reasonably have been expected to accrue to their exchequer. In the provinces, as an almost invariable rule, excepting when the weather is very unpropitious, the receipts are in excess of the outlay, and a handsome surplus is the result. These shows, probably because more localised, attach to themselves a very great amount of popular support among those who go to flower-shows to see the flowers and plants more than to see each other—an element the great London exhibitions do not attract. The masses of the people in London—those who represent and correspond to the operative and artizan classes in Manchester and Leeds, for instance, and who contribute so much to the financial prosperity of their horticultural exhibitions—never come to a large metropolitan show ; no attempt is made to attract them ; perhaps they are not wanted. A great London show means a fashionable lounging-place and promenade, with the popular element kept outside. At Manchester, the total receipts were £1650; of this sum, £1100 was received in shillings. So much for enlisting the popular element on the side of flower-shows.

The excessive drought, now so seriously affecting the southern, western, eastern, and a portion of the northern, midland districts of England, is one of an almost unexampled character, commencing, as it did, so early in the year. In the London district, hot, bright, sunny days, having the appearance of set-fair weather, alternate with days quite cloudy, and even cold, the clouds appearing to be charged with vapour, but none falls ; and notwithstanding a steady fall in the barometer, the long-looked-for rain appears as remote as ever. There is a prevalence of cold north-westerly winds, occasionally varied with short periods of warm southerly breezes, and again by north-easterly winds ; and notwithstanding the frequent bright appearance of the weather, the evenings are often chilly, and the nights cold. Observation points to the presence of cold currents of air that seem to cross each other in contrary directions ; and when the wind has been in the south-west, masses of clouds, driven somewhat rapidly across the horizon, had come from the north-west. Garden crops, though showing signs of distress, are yet looking better than might be expected. Peas, Beans, Potatoes, and suchlike, want rain badly ; and if it does not soon come, the crops of the former must be very small. The grass crops are very thin, especially on gravel and strong clay soils ; in many cases they will not be worth cutting, and they are so dried up as to be of little avail for cattle-food. Spring-sown cereals are giving out rapidly ; autumn-sown look much better, but must soon show signs of suffering. Where there is a scarcity of water, the deterioration of the crops is much more apparent. Since the above was written, a heavy thunder-storm has visited the London district, and the country generally, but

the fall of rain round the metropolis was somewhat scant, highly refreshing.

Such a season as this shows the value of all artificial apparatus for the purposes of irrigation. It points to the necessity for the construction of tanks for securing all the fall of rain-water on buildings &c., during the rainy season; for the husbanding of all waste water used for domestic purposes, the which can also be secured in tanks and pumped up for use as required. All cleansing processes have gone through, but there should be no waste; and the experience of the last three years goes to indicate the possibility of dry summer being the heritage of a good portion of England. Such a season brings before our notice the almost inestimable value of mulching, and the necessity for husbanding and employing all materials available for the purpose. True it is that nature serves man, and that all things are in debt to her; he may be strengthened and supported thereby; but in this reverse case, nature, that is never wasteful of power, and always beneficent in action, sometimes appears to fight against man, to the peril of his life and fare. It is then that man must parry these seeming attacks, and turn nature against herself, so that his work be not retarded. When confronting her, he must subjugate her; and in his brain—that armoury of divine forces—he must seek for his weapons. A man of invention and intelligence is rarely wanting in resources; and if a gardener had to fall back on this armoury, it is now, when suffering under the influences of a long-continued drought.

An invention, likely to be very useful to exhibitors of cut flowers, has been found in "Chapman's Multum in Parvo Packing-Case." We have an opportunity of inspecting it, and think highly of its merits. The case, when opened in the front, discloses two stands, one above the other, on which can be exhibited Roses, Dahlias, Verbenas, Fuchsias, &c.; and when the exhibition-tent is reached, these can be drawn out and placed in position. These stands are secured in grooves, and yet slide backwards and forwards easily when the lid is opened: when it is closed, it is practically impossible for them to shift or move about. There are receptacles in the stands for receiving the flowers, with a tube for them to rest upon; but the peculiarity is, that when the stems of the flowers are placed in the tubes, they are firmly gripped by a circular piece of some material like galvanised india-rubber; and so closely does this grip the stems of the flowers, without at the same time injuring the stems in any way, that by the force of the pressure, that were the box turned topsy-turvy, not only would the tubes not be loosened, but not a drop of water could escape, so securely is it confined. Those who have had experience of the insecurity of, and the danger of injury attending

the old stand, will appreciate this new invention of Mr Chapman's. Mr C. J. Perry, of Castle Bromwich, Birmingham, has now in use a set of boxes for Dahlias, Roses, and Verbenas, and speaks highly of their excellent preserving qualities.

Those also who state that the old regard for florists' flowers is on the wane, and that the florist of twenty years ago is fast becoming an extinct species, would have found their assertions in much danger had they witnessed the meeting of the Royal National Tulip Show held at Cambridge last month. There was no lack of flowers or exhibitors, fire or enthusiasm. The northern growers came in strong force, and brought with them some beautiful flowers. The date was a little late for the southern growers, as their flowers had become flushed owing to the prevalence of hot bright sunny weather, thereby losing that refinement so dear to, and valuable in the eyes of, a Tulip-fancier. As a general rule, the flowers appeared somewhat smaller than usual, but there was no doubt as to their purity and beauty of marking: delicate purity, richness of marking, and perfection in form, met in these Tulips, and who wondered at the regard in which the lovers of the Tulip held their flowers? The judges were men sincerely to be pitied, and on no account to be envied: theirs was a difficult and wearisome task, and for some three and a half hours they held bravely to their work; and their decisions appear to be as correct as they were honestly given. To judge Tulips requires not only a perfect acquaintance with them, but much honest independence and firmness. The examples of Tulip lore we heard would construct a unique vocabulary, could it be compiled; it was a part of the Tulip Show, and many of the visitors stood by listening with much interest to the discussions which took place among the exhibitors as to the relative merits of certain flowers, and enjoying the scene with a relish altogether new to those who had never before witnessed a Tulip Show.

The Society for the Encouragement of Florists' Flowers have made arrangements to hold an exhibition at the Crystal Palace, Sydenham, on the 6th of September and following days, when prizes to the amount of £150 (towards which the directors of the Crystal Palace Company give £100) will be offered for Dahlias, Hollyhocks, Gladioli, Verbenas, and Asters. Schedules of prizes will shortly be issued.



A VISIT TO FROGMORE GARDENS, WINDSOR.

It yet appears doubtful whether the wars of the adherents of the "extension" and "restriction" systems are ended. Probably neither of the combatants are to be "convinced against their will," and will

consequently hold to the determination of being "of the same opinion still." Before settling which is "to be or not to be," it would be well to define what extension or restriction means.

I presume every Vine is being extended under cultivation until it fills the number of feet of glass allotted to it, be that space great or small. Then restriction begins. The half of the natural life of a Vine embraces a great number of years—it may be assumed to be 500; that is, we know the Vine to be a very long-lived plant as compared to an Elm, or as the life of an elephant compared to a Newfoundland dog. Now it appears to me, that if either extension or restriction has very much to do with the life of a Vine, it matters little whether the extension system goes on for five or fifty years; both terms are but a fraction of the life of a Vine, and this consideration is practically of very little value as bearing on the health of Vines, every other circumstance being favourable. I find Vines, in the hands of some gardeners, restricted to one rafter for a given term of years, producing much finer Grapes and more of them than one Vine filling a whole house in the hands of others. The Cumberland Lodge Vine is by far the largest in this country. It has been extended as no other Vine has ever before been, and yet for very many years it has been subjected to a course of restriction such as no other Vine has ever been submitted to. The whole aspect of the Vine shows it is neither more nor less healthy than scores of Vines I know which are twenty years old, and restricted to one rafter. The whole thing seems to me to be merely a matter of culture. Even the old veteran of Cumberland Lodge quickly responded last year to the stimulus of forty loads of fresh loam, and the same of rotten cow-dung, as a top-dressing to the roots, by the production of 400 lb. of extra Grapes, and this year promises to be even more bountiful. All culture is artificial. Extension is a good thing for all fruit-trees whatever, until they fill their prescribed space, after which restriction is found to be an equally good thing, and productive of the most beneficial results under the hands of the skilful cultivator. We are accustomed to lift, replant, manure, and top-dress our hardy fruit-trees, and find the fruit increased in quantity and improved in quality to an immense degree. The very same treatment is applicable to Vines, and the same effects are observable.

I have been led into these remarks by a recent visit to Frogmore, where everything in relation to gardening is done on a grand scale, and necessarily on sure and safe principles. Never before has root-pruning and branch-pruning been carried out to the same extent on full-grown trees, and with such uniform success, as has been done at Frogmore during the last two years, simply because the same could not be possible at any other place in the kingdom; and no ordinary amount

of decision and energy was necessary to undertake and discharge such a task. Where a few years ago could have been seen only sheets of leafy twigs shutting in every brick in the walls, there are, as I saw them on the occasion of this visit, sheets of blossom or blossom-buds. All sorts of fruit-trees have been served alike, and almost every tree in the gardens, including old standards and the fancy trained espaliers. The low-lying position of these gardens—but little above the bed of the Thames—on a consequently moist subsoil, inducing an overgrowth of timber, compelled this wholesale root-pruning and thinning of the wood. While this process was in progress, the different varieties of fruits have been ranged together on sections of walls and borders, as the case might be, so far as cultural considerations would permit of its being done. Whole acres of Gooseberry and Currant trees have been lifted and replanted after the green fruit of the former and ripe of the latter were gathered in July, to admit of the trenching of the ground, the only precautions necessary being a little shading and syringing at certain times.

What do your readers think of 300 bushels of Onions being required for the royal tables yearly, 40,000 heads of Celery, an acre and a half of Horse-radish, and everything in the Brassica way counting by scores of thousands! Mr Rose, the head-gardener at Frogmore, adheres to but few varieties of vegetables, knowing, as most really practical men do, that three or four varieties of Cabbages or Onions are amply sufficient. Whilst among figures, let me mention a few things grown by the hundred or thousand for cut flowers, or for the decoration of Windsor Castle. By the thousand, such things as Pinks, bushy plants in 6-inch pots, Mignonette, Chinese Primulas; Iberis, of kinds; Cinerarias, very fine; Cyclamens, one year from the seed, fine, in 6-inch pots; show and fancy Pelargoniums, &c. By the hundred are seen Hydrangeas, Euphorbia Jacquiniiflora, Fuchsias, Coleus in variety, Achimenes in 4 and 6 inch pots, already in full bloom in the middle of April; Poinsettias, Azaleas, Roses, Spirea japonica, &c. But in truth I should mention the whole list of popular flowers for all times and seasons. Maréchal Niel and Gloire de Dijon Roses are trained to the rafters of a span-roofed house, and nothing can excel them for cut flowers in spring.

About 8000 pots of Strawberries are forced, Prince of Wales and Prince Alfred being favourite sorts. For earliest supply, a variety is grown, raised by Mr Rose at Floors, named Perfection, something after Black Prince, but which might be called "Scarlet Prince," being greener in the foliage, and bears brighter-coloured fruit, and is excessively prolific. Strawberries were of course abundant, daily supplies being sent to Osborne. Not a plant seemed to have missed.

2000 pots of French Beans were in course of forcing in various stages, 600 beans a-day being the demand, all being forced in vineries at work, and mostly on the floors of the houses, the thin copper sash-bars and iron rafters admitting abundance of light. Every pot is expected to yield on an average from 80 to 100 Beans.

Ripe Grapes have been in use since the middle of March from pot Vines. The crops on all these Vines, which can be counted by the hundred, are extraordinary. Mr Rose was celebrated for his success with pot Vines at Floors Castle; at Frogmore he is equally successful. Six to eight bunches is the crop allowed on Vines in 7 and 8 inch pots. Small pots and abundant feeding is the system pursued, the weight of fruit obtained from each plant exceeding the weight of the soil the pot contains after being dried.

Nearly all the vineries are renewed, or are in course of renewal. Whole houses of Black Hamburgh and of Muscats are planted, besides which Alicante, Napoleon, and Lady Downes are relied on as stock varieties. Golden Champion is doing well and showing abundantly, and Mr Rose speaks of it with perfect confidence: notwithstanding the severe critical handling this Grape has suffered, it will ultimately triumph when it gets established. Mr Rose has, with an eye to maintaining the supplies while renewing the vineries, accomplished the filling of two vineries with a full crop of fruit the second year, the roof being equally covered with bunches from end to end. Between each permanent Vine in front is trained a pot Vine, fruited nearly its whole length, reaching half-way up the rafter, the Vines allowed to root into the border. Three bunches only are taken off the permanent Vines. Others are planted against the back wall, which meet the pot Vines half-way down; these are allowed to fruit their entire length. The Vines have broken at every bud: the bunches are not of large size, but are good table, if not sensational, fruit. The pot Vines are thrown away when fruited, those on the back wall retained for a time. A large batch of pot Vines are still in the open air behind a wall, which are brought indoors to take the place of those fruited in March and April, thus taking two crops from the same house in one season. The Grape crops, to my thinking, are much too heavy altogether; but Mr Rose has special care to the foliage, the true key by which success is opened up. The command of water is unlimited.

I did not purpose writing a paper in detail of what is to be seen at Frogmore—it would be impossible to do so within a reasonable compass, the subjects worthy of notice present such an *embarras des richesses* to the mind's eye. Before it is a panorama of hundreds of feet of Mushroom beds, in all stages, some of them studded with buttons and knobs of Mushrooms, like stone Turnips, for gathering in succession on future

; pits after pits of the old Ash-leaf kidney Potato, some on the ground, some fit to dry, some where the crop had just been raised; of Maclean's Little Gem Peas in the same stages as the first—a most excellent dwarf Pea for forcing, when there is space to plant it; pits of Melons and Cucumbers, the latter in wonderful number and productiveness, without a particle of bottom-heat, the heat derived only from the atmosphere of the house. Frogmore has been celebrated for its Pines on the planted-out system; nor does prestige fail, as I counted 40 smooth Cayennes, ripe and ripening—5 to 7 lb. each, beautifully swelled on plants with comparatively few leaves—that is, young plants; indeed, not 12 months planted. The pots were equally fine—a whole pit of about 100 in 13-inch diameter and out of bloom, were extra bold, the foliage short and masses in succession were in good strength.

There is a story of a man who, having some houses for sale, carried with him a brick from each as samples of what his property was like. We feel that the foregoing remarks are just like the man's. The measure of my success in presenting your readers with a notion of what is done in those gardens must be gauged by what I have put down concerning them: to describe the gardens themselves requires a volume and a facile pen. They are worthy of the Park, Castle, and establishment of which they form an adjunct. Mr. Rose is said to be the architect of his own fortune. Mr Rose's ability, energy, and single-minded pertinacity of purpose, nominated him out as the fit man to undertake the resuscitation of the leading private garden in the nation: and yet, after all, the proper is but a part of the huge charge. Many miles of ground walks have been remodelled, involving the carting and distribution of several thousands of loads of gravel; shrubberies have been laid out, giving occasion to the transplanting, thinning, and pruning of large trees and shrubs; old drives have been cleared and new drives constructed, involving labour properly belonging to the wood-forester's department, such as lopping the overhanging limbs of whole avenues of infirm elm-trees—a tree ever to be seen near drives and frequented places.

What is interesting might be written of the beauties and magnificence of Windsor Park and Frogmore, and their historical reminiscences; of the beauty of the grounds about Frogmore House; of lake and the wooded knolls enshrouding the marvellous mausoleums of Prince Consort and Royal Duchess; and the almost unparalleled vista of the long drive in Windsor Park, excelling in quiet grandeur anything else of the kind in Europe;—Virginia Water, the creation of an English park lake, its varied outline, set in forest

masses, dipping to the water's edge, reminding one, by its quiet seclusion, its natural aspect, and its few architectural accessories, of some Highland lake one loves to remember. Many reminiscences of Windsor are included in the records of the martial, social, and intellectual progress of our country's history, of which I am here unable to speak. I can say, however, that the name of Mr Thomas Ingram will ever live in association with these gardens while they exist, as that of Herne the Hunter with the oak in Windsor Forest, part of which still exists, if I rightly remember, and under which was the scene of the lewd Sir John Falstaff's final humiliation by the merry wives of Windsor.

THE SQUIRE'S GARDENER.



THE CULTIVATION OF HARDY FRUITS.

THE APRICOT.

(Continued from page 259.)

ABOUT the middle or towards the end of January, the young Apricot-tree, which has been fixed to stakes since the period of planting in autumn, may now have them removed, and, after having received the necessary pruning, be placed permanently against the wall. As the reader will already infer, the fan mode of training is, in my estimation, the best for the Apricot. Like the Cherry and Plum, it is liable to lose some of its branches without any very apparent cause, and I therefore prefer the fan style of training to all others—for this one very evident reason, viz. that if a vacancy should occur at any time it is more easily filled up than if horizontally trained. And further, the very nature and habit of the tree, and the fact that it is necessary to be preparing and laying in some fresh shoots every year in order to have a constant supply of fruit-bearing wood, as the Apricot produces its largest and finest fruit upon one and two year old shoots, make it almost necessary that the fan method of training should be adopted. If the young tree possesses seven shoots, the centre one may be cut back to about 14 or 15 inches, and the three left at either side should be shortened considerably, the under ones being left the longest. In fixing them to the wall, train the centre one perpendicularly, and then the under ones may be elevated at an angle of, say, 25° or 30°, while the other four branches may be arranged equidistant between the centre and under ones so as to form the trained tree. If vigorous and healthy wood is made the following year, the branches may at the next training season be brought down to their permanent position. After the foundation of the young tree is thus laid, the principal work of the

ltivator is to attend to the judicious selection of wood at the period of the winter-pruning. Upon this a considerable amount of the success of fruit-production depends. All rank watery wood not thoroughly ripened ought at once to be cut away, not even leaving a spur where they have been, as such spurs, in place of producing fruit-buds, all probability would for years produce coarse rank shoots similar to the ones rejected. The permanent branches should be formed of **ice**, firm, short-jointed wood, the production of shoots which have not grown to a greater length than 2 to 2½ feet. Such branches will have perfected their wood to the very point, and will be far more likely to produce a healthy tree than longer shoots. These may be cut back 6 or 9 inches, to induce the formation of side-branches the following season, which branches, when spurred back, may afterwards form fruit-bearing spurs. Where the main branches are over 1 foot distant from each other, side-shoots ought to be introduced permanently, so as to keep the tree thoroughly furnished, and have all available space upon the wall covered. Between the permanent branches young shoots also may be laid in for the production of fruit, and by a judicious handling of the knife these may be removed after bearing their first crop, while others may be in readiness to take their place, thus keeping up a constant supply of good young wood all over the tree, which, as has already been stated, is much superior to what is produced upon spurs of several years' growth. A tree thus managed will never become overcrowded. Nothing can be worse than, year after year, to lay in almost all the wood that can be got, until such time as the tree has become so crowded that it is absolutely necessary to take it all down from the wall and give it a thorough "thinning out." Not only is the fruit upon such trees inferior in size and quality, but the check such an operation produces upon it often proves very injurious, and sometimes fatal; as I have often noticed that where this had to be done year after year, branch after branch died away, until nothing but a skeleton was left, which eventually had to be tossed aside. In cutting away the points from the shoots of the Apricot, it is necessary to be very careful that the front bud is a leaf and not a flower producer. No one need fear to make a cut before treble buds, as the centre one is sure to be a leaf-bud; but when cutting before one bud *only*, the operator ought to be convinced that it is a leaf-bud ere he applies the knife. The practical eye can easily detect which is which, but the beginner must be careful until experience enables him to distinguish the one from the other.

Like all other trees, the Apricot at times has a tendency to grow rank in some parts, while in others the reverse may be the case. I have more than once referred to this in treating of other fruits, so now

it may suffice to state that the best means of producing a well-balanced tree is by regulating the amount of foliage produced on its several parts. Whatever portion of the tree has a tendency to grow too strong should have its breadth of foliage at once curtailed, by pinching out all the side and lateral shoots ; and if this has not the desired effect, portions of the leaves may be cut away, and the branch bent down to retard the flow of sap. On the other hand, the weak portion of the tree should be encouraged as much as possible by being elevated into a position likely to encourage the flow of sap, while the foliage should be exposed as much as possible to the light and air, and the result in a year or two will be a well-balanced, healthy, and vigorous tree.

In summer the Apricot requires to be well attended to with regard to pinching, pruning, and disbudding. As soon as the young shoots are an inch long or thereabouts, the tree ought to be regularly gone over, and all badly-placed shoots at once removed by gently rubbing them off with the finger and thumb. I would not recommend, however, that all the shoots, save those for permanent use, should be removed at this time. I would leave three times the quantity necessary, so that a good selection could be made therefrom. It is an easy matter to go over the trees again in June and July and remove the superfluous shoots, taking care, however, not to rub them off this time with the finger and thumb, as the wound caused thereby might cause gum to exude, to the ultimate injury of the health of the tree. All branches removed after the wood has obtained any degree of solidity ought to be nicely cut off with a good sharp knife, as the wound caused thereby will speedily heal over, and will not be so likely to produce gum. In winter the shoots required may be laid in their places, and others cut back so as to form spurs. To induce the formation of spurs, the shoot ought to be cut back from 1 to $1\frac{1}{2}$ inch from whence it started. Nothing looks so bad as spurs 3 and 4 inches in length, while there is no practical benefit to be obtained thereby.

Root-pruning is not so absolutely necessary for the Apricot as for many other kinds of fruits ; yet in many cases it may prove of much practical utility. Where the borders have not been prepared with great care, more particularly if there is a known substratum of tenacious cold clay, it will be necessary every two or three years to have recourse to a regular system of root-pruning. The trees themselves will in most cases give a true index of their wants in this way, by the production of long watery growths, which never ripen, and rarely produce few, if any, flower-buds. Wherever a tendency in this direction is shown, let root-pruning be had recourse to at once. In the case of young trees not more than three or four years planted, they may with much immediate benefit be operated upon in September ; but where

the trees are of some considerable age, and never have been root-pruned, **the** month of January or the early part of February will be found **the best** for performing this operation. In either case much care must be **exercised** in order to injure as little as possible any of the roots. A **trench** ought to be cut round at some distance from the tree with a **spade**, after which steel forks ought to be used to work forward in the **direction** of the tree, shaking every root free from the soil as the operation proceeds until the whole are laid bare. All the roots which have **a downward tendency**, and all which are gross and devoid of fibre, **ought** to be taken away with a sharp knife, leaving as clean a wound **as possible**. After the whole has been gone over carefully, the tree **may** be replanted, using as much fresh good soil of the nature already **recommended** as can be procured. Give the whole a good watering if **the** soil is dry; afterwards mulch the surface, and the operation is **finished**.

JAMES M'MILLAN.

(To be continued.)



HINTS FOR AMATEURS.—JULY.

MANY of the Brassica tribe of plants for winter supply will now be out **and** growing rapidly, if all has gone well. With us, growth never was **more** rapid. The hoe and fork will now be required more than at **any** other time, both for keeping an open healthy surface and for **destroying** weeds. There will soon be Turnips, Potatoes, and other **crops** cleared off ground, which will require preparing and planting. A good stock of Kale, Cabbage, and Cauliflower, ready to plant, will **be** useful for "filling up." Vacant spaces in autumn have a wasteful **appearance**, besides giving trouble in keeping them clean. All main **crops** of Broccolis and Brussels Sprouts not planted should have **attention** at once; and as July is a hot month, extra attention with watering **will** be necessary: puddling the roots, and placing the earth properly **to** them, must be kept in mind, as formerly advised. Coleworts should **be** planted thickly for cutting young, and leaving every alternate-plant **to** grow larger. Successions of Cabbages are more preferable for **general** use than old ones left to sprout and heart, but the latter plan **is** often adopted; and when the old crops are cut, the stumps should **be** cleared of the oldest of the leaves, and a good mulching given; or **rotten** dung forked in over the roots answers better. If a chance crop of **Peas** is to be sown, an early kind—such as Sangster's No. 1 or First Crop—**may** be tried. Success with late Peas depends much on a mild autumn—**not** too damp. Asparagus and Seakale may be improved with a

sprinkling of salt over the surface of the soil among the plants, which is an easy way of destroying weeds. Sow Carrots and Onions for drawing young, also all kinds of Salads, in cool well-moistened ground. Endive and Lettuce may be sown extensively this month, as they will keep on long into the autumn if watering is not neglected; sow them thinly where they are to stand. Celery should be got out as early as possible now, keeping good balls with the roots, and giving abundance of water after they are planted. Slight mulching will be serviceable for keeping the roots cool and moist; and if the Celery-grubs appear, pick them off, and dust the parts with lime. Lime well dusted in the ridges is good for dislodging slugs and other vermin. Twist the necks of autumn-sown Onions to help them to ripen: when they are allowed to stand long in the ground, they (if showery weather sets in) are apt to make a second growth, which destroys their keeping qualities. Kidney Beans and Scarlet Runners may require heavy watering and mulching, if on sandy soil, to keep them in bearing. Pick all pods off them as soon as they get past use. Pinch in Runners where they are to be kept dwarf: we get a longer continuance of bearing from those kept down than from staked ones; besides, no time is spent in staking. Leeks, if not already planted, may have attention at once; they require abundance of good manure: those left where they were sown should be thinned out to 8 inches apart (or less if the ground is poor), and earth drawn about the stalks to blanch them. If more Spinach is to be sown, let the soil be well watered the day previously. If weather is wet, this precaution will not be necessary, but covering in and treading on the soil, when wet, is an evil to be avoided. When it is compulsory to sow in wet weather, let the earth be drawn over the seed with a rake, and treading or smoothing it when dry on the surface. Ground may soon be prepared for prickly Spinach. Heavy coatings of manure, turned in near the surface, is an evil by which the crop is often destroyed wholesale. We prefer trenching deeply; and if manure is required, it is turned into the bottom. A week or two later for sowing it in the south will suit very well. Cabbage, for autumn planting, may be sown in the north about the third week in the month. The first week of August to the middle of the month is suitable for the south of England. This being a very important crop, it should suffer no check from drought or grubs, otherwise premature seeding in spring will be the result. Mats or evergreen branches placed over the seed, and well watered till it comes up, will do much to secure success. Vegetable Marrows will require thinning and stopping; if they are allowed to become matted, the crop will be a poor one. Stop the shoots of Cucumbers and Melons above the fruit, and do not allow too many

to swell at one time. Cucumbers, if they have fruited freely and are beginning to look "rusty," may be cut back, clearing off old leaves, then well surfaced with good loam and dung, thoroughly watered with tepid manure-water, warmth afforded from dung or otherwise, well sprinkled, and shaded from strong sun. They will soon start into active growth again, and bear for a long time. The same treatment may be given to Melons which have finished their crop, and have their foliage in healthy condition; but they require more care than Cucumbers. Decay at the necks of the plants, and the attacks of red-spider, are their worst enemies.

Young fruit-trees will require frequent looking over, for if strong shoots are allowed to take the lead, the tree will be much injured; by timely stopping strong growths, a number of side-shoots will be emitted, and a year's training gained. An unequally-grown tree has a bad appearance in a well-kept garden. Continue to stop shoots and take off what are not required, doing it by degrees, as formerly advised. Pears growing above the tops of walls are very unsightly: while we write this, however, we have a fine wall of trees sending single shoots above the coping; they are to remain till autumn, and be trained over to the other side to take the place (piecemeal) of Cherries which are doing little good. Their roots are growing into a hollow hedge, where they cannot be helped in any way. Thin, trim, and regulate Annuals; Mignonette, and some of the freer-growing plants, may be cut back, to keep them clear of box and grass edgings: plants growing over edgings have a slovenly appearance; besides, they kill whatever they grow over. Top Sweet Peas, and keep the pods off them; plenty of manure-water will keep them long in flower. Propagate Pansies and Hollyhocks by cuttings; young shoots of the latter, taken off with "heels" attached, and well attended with water and shade, will make fine established plants by autumn.

Dahlias require tying up carefully to their stakes; any misplaced shoots or useless ones may be cut out; plenty of manure-water may be given; on heavy rich soil it is less required. Pelargoniums which are well ripened in their growth may be cut down, removed to a frame if at command, kept dry a few days, then well sprinkled with water, and shut up with sun-heat: when growth makes its appearance, plenty of air and light should be given, and when they are half an inch or so long, the old plants may be shifted out of their flowering-pots, reduced at the roots, potted into smaller pots, using sandy loam. When the pots are well filled with roots, a liberal shift of rich loam and a little sand should be given, be carefully watered, and no damp and unhealthy atmosphere harboured among them—these are the principal requirements of this plant. Green-fly delights in feasting among the young shoots.

It is well to remark that great injury from bad potting and injudicious watering is done to Pelargoniums. The roots should be wholly encased by the new soil, and no space left between them and the sides of the pots; extra drainage will help those inexperienced in watering; rain-water, or from a pond, is most suitable, and enough given when required to wet the whole ball of soil. Cinerarias, Primulas, Balsams, and other quick-growing plants, must not be allowed to become pot-bound, otherwise premature flowering will be the result. Sprinkle over head plants in windows, giving them plenty at their roots. If boxes are well filled with roots, a little of Standen's manure may be sprinkled over their surface, according to the directions on the package. This manure is less offensive than some others employed. When manure of an offensive kind is given, it should be covered with clean soil, but not battered down, which keeps out air. Carnations and Picotees should now be layered; all budding of Roses should be finished as early as possible. Propagate Pinks from side-shoots, taking them off at the joints, stripping off the lower leaves, and placing them neatly in sandy soil in a shady position, covering them over with hand-lights, watering, and giving air freely as soon as growth commences. Chrysanthemums will now require liberal treatment with manure-water, and if the specimens are large, staking to keep them open at the heart may be done as soon as convenient. The tops of some of them may be layered into small pots, and plants can be had of a small size for many purposes. Lawns should now be kept clear of seeding weeds; they cannot be got clean out by the roots, a little salt placed over the broken part will in most cases kill them. Roll walks often, to keep them smooth and hard.

M. T.



THE POT-CULTURE OF INTERMEDIATE STOCKS.

Too much cannot be said in praise of this most useful section of the Stock family. Grown ever so carelessly, they yield a good supply of flowers; but when grown in pots and carefully tended, they produce the spring and early summer masses of blossoms, almost unequalled by any other plant at the same time. No gardener who has a house to be kept gay should be without them, nor should the amateur cultivator who has a frame and a spot of ground at command.

Seed should be sown in June, using boxes filled with a light rich soil, distributing the seeds equally but thinly over the surface, and covering to the depth of eighth of an inch, and watered through a fine rose. The boxes should be placed on a somewhat shady border, and be covered

ered with a hand-glass or some such protecting agent ; or they can be placed in a pit or frame, admitting air, and keeping the surface of the soil nicely moist. This will secure a perfect germination of the seeds, and robust growth. Shading must be employed should the sun shine directly on the hand-glasses or pit in which the boxes are placed ; but the less shading the better, if it can be dispensed with, as one result sometimes is, to cause the plants to grow weakly, and render them liable to damp off.

When the first leaves are fully developed, the plants may be pricked off into boxes, in rows 3 inches apart each way, retaining as much soil as possible about the young roots when transplanting them. A rich light compost should be used ; and when the process of planting is done, and a gentle watering has been given, the boxes can be placed in the frame, and some shading applied for a few days till the roots lay hold on the soil. When growth sets in the lights can be removed, and the plants wholly exposed to the action of the elements.

All that is now required will be frequent waterings of the plants as necessary, and keeping them free from weeds, until the flowers begin to form in the leading shoots sufficiently to distinguish the double-flowering from the single-flowering plants. Then comes the process of potting the double-flowering plants ; and here a little care will be requisite. By this time the roots of the plants will have so penetrated the soil as to make it possible for the soil and plants to be lifted from the box bodily and placed on the ground ; then carefully divide it so that each plant shall have a good portion of soil adhering to the roots. Meanwhile a compost for potting should have been prepared—say, of old turfy loam, chopped fine, one half ; of leaf-mould, river-sand, and well-decomposed cow-dung, equal parts, mixed well together, using pots large enough to take the ball, and employing good drainage. A good watering should be given, and the plants placed in a cold frame, shading from the sun till they are thoroughly established.

To secure a good growth, keep the soil moist, and shift into a larger-sized pot if, and when, necessary. Keep the plants symmetrical by pinching out irregular growths, and apply moderately-strong liquid manure as soon as the plants are well established in their blooming pots. An airy cool position near the glass should be given them during the winter, and frost should not be allowed to reach them. A liberal feeding will develop fine flowers, and they will be found of great service in the decoration of the conservatory when fully in bloom.

A. K.



NOTES ON HARDY HERBACEOUS PLANTS.

CRUCIFERÆ.

THIS is a very interesting and extensive order of plants, more remarkable, perhaps, for the great importance and value of the food products it yields to man and beast than for high ornamental qualities, though it comprises a large number of plants by no means deficient in that respect. The greater number of the ornamental species are comprised in comparatively few genera, and are mostly Alpine or sub-Alpine plants. Some very interesting and beautiful species, from peculiar habitats, are difficult to grow and keep under ordinary, or even extraordinary, conditions; but such have been avoided in making selections and only such as will succeed with ordinary facilities adopted. Many of those selected are adapted to a variety of purposes; they will be found beautiful objects on rockwork, and for edgings and masses in the spring flower-garden; and the majority are available in a variety of soils for culture in the mixed border, while there are a few that will be found very useful for naturalising in woods and semi-wild places. The uses to which they may be applied and the culture will be noticed more particularly under the genera and species as they are severally considered.

Alyssum, Madwort.—This is rather a numerous group, composed of a few annual and biennial, and a majority of perennial species. The perennials are half-shrubby plants of humble growth, and evergreen to a greater or less degree; the flowers are small individually, but produced in dense masses and in long succession. They are plants of the easiest culture, succeeding best in light gritty loam of a rich quality, but doing very well in a great variety of soils and situations. The rockwork, mixed border, and borders of shrubberies are all fit places for these plants, and some are qualified for naturalising, and will be noticed in their place. They are propagated by division in autumn and throughout winter and spring, but if done in early autumn there is no sacrifice of bloom, which is inevitable to some extent in the later periods; by cuttings also in spring and throughout the summer, inserted in sandy loam and leaf-mould under a hand or bell glass in a shady place, as behind a low wall or hedge. Cuttings, if early struck, make the most vigorous plants, and flower the strongest the following year, and a few should be struck annually in order to keep up a healthy and ample stock. This is especially necessary where they are to be largely used in filling up the beds or the summer flower-garden in the spring months; and stock of near uniform plants can only be maintained by this means. In this cas-

cuttings may be taken to the extent required immediately before the summer occupants claim their quarters, and the old plants be turned on the rubbish-heap, or utilised in any other way.

A. argenteum, *Silvery-leaved Madwort*.—This is a compact-growing species, with small oblong leaves, broader at the point than base, silvery on the under-side, and dotted above with minute starry grey hairs. Flowers in dense panicles, yellow, appearing in April and May; native of Piedmont and Corsica, in exposed rocky places. Best fitted for culture in rockwork, and succeeds but indifferently in the open ground, where the soil is naturally moist: height 9 inches to 1 foot.

A. gemonense, *Austrian Madwort*.—This is a splendid sort, of shrubby diffuse habit, with large lanceolate leaves, hoary on both surfaces, the margin marked with a few obscure teeth. The flowers are produced in great profusion in April, May, and June, and are very conspicuous in masses at a distance, being bright golden yellow. This is the most valuable of all the spring yellow bedding plants, being superior to the ordinary form of *A. saxatile* in vigour, colour, and profusion of bloom. It grows well everywhere, and in a variety of soils, and is quite hardy, but prefers light dry loam. Where the ground is wet, little hillocks should be raised to plant upon, in order to secure immunity from the effects of stagnation. It may be naturalised on dry banks in semi-wild places with ease, if rabbits do not abound in the place; but need not be attempted if they do, as they are partial to the plant in a strong degree.

A. saxatile, *Rock-Madwort*.—Botanists are not at one with each other regarding the distinctness of this plant from *A. gemonense*, and the strongest opinion appears to be favourable to regarding the latter as a variety of the Rock-Madwort. The two forms are, however, quite distinct for horticultural purposes in large collections, but in smaller only one may be recommended; and in that case *A. gemonense* should be preferred, as being the most beautiful, and adaptable to a greater variety of uses. *A. saxatile* is, however, equally well fitted for naturalising on dry banks and about the walls of ruins, where a little soil may be introduced for it to grow in. Height about 9 inches. Native of many countries of S. Europe and W. Asia. Flowers about the same time as *A. gemonense*. A variegated form of this species may or may not be considered valuable, according as taste in these things sways one. My own opinion is that it is worthless; the contrast between the hoary ground-colour and the creamy-white margins is not sufficiently distinct; and the variegation has the effect also of depreciating the beauty of the flowers, which is very obvious when the two sorts are grown side by side.

Arabis, *Rock-Cress*.—This is a rather numerous family, and presents

a greater variety of colour in its species than *Alyssum*; but I do not think a more extensive selection would be proper, for though easily-managed hardy plants, only two or three species are far enough removed from weediness to be admitted among ornamental plants. Those included in the following selection are most easily cultivated, thriving in most soils and in almost any situation. They are, however, most characteristic of rockwork, and even when grown in borders and other flat surfaces have the best effect when raised in hillocks. They are of more straggling growth, if *A. lucida* is excepted, than the *Alyssums*, and require a little more attention where trimness and smoothness of surface are required; but the pegging necessary to secure this object may be turned to account for the purpose of increase, as by this means alone, owing to the tendency of all species to strike root from their trailing stems into the ground, if they are kept firmly attached to it, a larger increase may be obtained in one season from a plant than by means of cuttings or division. Cuttings, if they should be resorted to for increase, require the same treatment as has been already noticed for *Alyssum*, only the bell-glass is not so indispensable. They must be taken as soon as growth is active, and as they are of an unhandy style—always top-heavy—in the case of the species of the *Albida* type, as much of the flexible cord-like stem should be taken along with the rosette of leaves as is convenient, in order to provide means of fastening the cutting securely in the soil. Seeds also may be used sown out of doors in any spare spot, but only the specific forms may be raised in this way with certainty; the variegated varieties do not come true.

A. albida, *Sicilian Rock-Cress*, syns. *A. Caucasica* and *A. crispata*—This is the best known, and one of the best, of the family. The plant forms diffuse patches of running stems, clothed at the extremities with rosettes of pale-green leaves, wavy and toothed on the margins, and clothed with greyish hairs. Flowers white, in profuse loose panicles about a foot high, appearing in greatest profusion from March till June, but flowering more or less earlier and later than those months. A most valuable plant for spring flower-gardening, for rockwork, for the mixed border, and for naturalising on dry banks, about ruins, and in open woods. The variety named *A. albida variegata* is a beautiful and useful plant for purposes of edging and massing in the flower-garden. There are two distinct forms of this—one with the variegation white, and the plant more weakly and small in all its parts; in the other, the variegation is yellowish or sulphur, and the plant more robust: both are useful, but the smaller-growing plant is the more elegant of the two. Native of Sicily, Greece, the Caucasus, and other parts of Russia.

A. alpina, *Alpine Rock-Cress*.—This form does not differ much from *albida*, except in respect of freeness of growth, in which it is inferior to that species, and in the smaller size and closer tothing of the leaves. The flowers are equally profuse and white, and appear from March till June, but are less disposed to flower either before or after these periods. Enjoys a very wide distribution on the Alps, and occupies a variety of habitats, but chiefly stony places.

A. blepharophylla, *Californian Rock-Cress*.—This species is of recent introduction. It is nearly allied to *A. albida*, having the same mode of growth and similar character of foliage, but the flowers, also of the *albida* type, are of a rosy-purple colour. The flowers appear in May and June. Best adapted for culture on rockwork, but in dry warm places will likely prove hardy in most parts of the country in the open shelter. Height about 9 inches. Native of California.

A. lucida, *Shining Rock-Cress*.—The species in this case is of much greater ornamental value than the variety named *A. lucida variegata*, which is undoubtedly one of the handsomest of hardy yellow variegated plants at present in cultivation. The plant grows in close tufted habit, producing close rosettes of shining dark-green leaves beautifully variegated with bright yellow. About 4 to 6 inches high, not plentiful in the country; the flowers are white, but should not be allowed to appear in the variety, as the foliage becomes injured thereby. The normal form is a pretty plant on rockwork, being very neat and compact in growth. Native of Hungary.

A. procurrens, *Procurrent Rock-Cress*.—This is a pretty smooth-winged prostrate plant, with entire, shining, almost linear leaves, entire to the margins. Flowers largeish, pure white, rather profuse, appearing in April, May, and June; height 6 to 9 inches. I have grown this plant for greenhouse decoration in shallow well-drained pots, and found it most useful in the end of February and throughout March for ornamenting front stages. A very pretty variety with variegated leaves is not very plentiful in gardens, but it is a beautiful plant, and would be more popular once it is more widely known than it is at present. Native of Carniola and Hungary. Easily propagated by cuttings in early summer, and by division in autumn or winter.

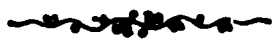
Aubrietia.—A very interesting and attractive genus, of few species called, but which are not strikingly distinct in character one from another. They are all, however, worthy of cultivation, though not together in one collection, except perhaps in the largest; but no collection of spring flowers may be considered complete without one or two of their best forms in its ranks. The same spreading trailing manner of growth, and the same rosette style or crowding of the leaves at the extremities of the stems and branches, as characterise the

Rock-Cresses of the Albida type, are characteristic of these little plants, but in miniature only, the plants being less vigorous and bold, and when managed well in a congenial situation and soil they become the most beautiful objects. They are best adapted for culture on rock-work, their low carpet-like growth being invaluable for that kind of ornamentation. They succeed in all light loams freely in any situation, but very indifferently, and often fail entirely, in heavy wet soils. In beds and borders, in soils of the unfavourable kinds, it should be raised above the surface-level by some means, so as to secure that comparative dryness and freedom from stagnation it likes so well. A very good plan, in heavy loam and clay, is to make a pit to the extent of the plant is designed to occupy, and about half the depth of a spadeful filling in with stones, brick-rubbish, or rough charcoal to the surface-level, finishing up with a mound of good loam and leaf-mould on the top of the drainage, about 6 inches deep, on which to plant. The better forms of these plants are worth any amount of trouble that may be necessary to secure their wellbeing, and those who succeed will not regret any tax that may have been temporarily laid upon them when they come to enjoy the rich beauty they so freely and continuously yield at a period of the year when flowers in profusion are comparatively rare. Their brilliant dense masses of flowers are being turned to excellent account in spring bedding, or massing of flower-gardens. Propagation may be effected by cuttings in early summer in a shady place, by division in autumn or early winter, and by seed sown as soon as ripe in a cold frame or under a hand-glass, the plants to be pricked carefully off into rich light soil as soon as they can be handled.

A. Campbelliæ, *Campbell's A.*—This is comparatively a new form and is probably of garden origin. It is the most brilliant of the group, forming dense carpet-like patches of pale-green foliage, which is profusely covered with comparatively large light violet-purple flowers from March till June.

A. deltoidea, syn. *Farsetia deltoidea*.—This is an old inhabitant of gardens, and though decidedly inferior in showy qualities to the preceding and other varieties, is no mean plant in its season. It is less luxuriant than Campbell's A., and the flowers are smaller and paler purplish blue, but very abundant, appearing about the same time. The varieties *A. d. grandiflora* and *A. d. græca* are distinguished only by greater size and brilliancy of colouring, and are simply more valuable where these qualities are essential in the highest degree. They are all valuable plants for town gardens, for, except that their natural brightness does not appear to the greatest advantage in a smoky atmosphere and amid smutty surroundings, there are few Alpine plants

that can accommodate themselves with more facility to conditions so opposite to those of their native homes. *A. deltoidea* is a native of the Levant.



THE CULTURE OF THE ROSE IN POTS.

(Continued from page 110.)

AT the close of my last communication I had reached that stage of my process of culture where the Roses gave a promise of a fine bloom. Since then, the fulness of the promise has been more than realised, and beautiful and massive blooms have rewarded my labours, crowning a healthy and vigorous foliage.

There are two things with which the cultivator has to grapple in the course of his treatment—viz., mildew and insects. The Rose, when grown under glass, is much more liable to the attacks of these, and much more likely to be injuriously affected by them, than when grown in the open air. In the course of one night I have observed mildew spread out into mealy patches on leaves that the day before were a polished green. Sulphur dusted over the parts affected will arrest its farther progress when applied in time; but should an application of this kind be neglected, if only for a day or two, one need not be surprised should every plant in the house become affected by it. Soot has been recommended as an effectual cure, but I cannot attest to its curative properties, never having tried it; and I object to its use on account of its being a rather unwelcome introduction to a house painted white, which I have a pride in keeping clean.

The Rose-maggot has also sorely affected my Roses this season, in some instances causing some of my most promising plants to be nearly bereft of flowers, as this pest drills its way into the heart of the buds, causing them to fall off. It is first discovered lodged in the folds of the half-expanded leaves, and, on close examination, these will be found to be apparently bound together in pairs, by means of the maggot eating its way through them, and so sewing them together, as it were, by means of a fine capillary thread, which passes from the maggot in a way something similar to that observed in the case of the spider. The maggot is an incessant worker, and pursues its avocation until the leaves it inhabits are riddled with holes.

Various are the antidotes recommended for the purpose of staying the ravages of this pest. The following I consider most effectual:—Take of powdered sulphur $\frac{1}{2}$ lb.; of unslaked lime, finely pounded, 2 lb.; and tobacco liquor, formed by steeping some tobacco in hot water,

$\frac{1}{2}$ lb. First, thoroughly mix the lime and sulphur together, then add sufficient water to render the mixture rather thinner than paint; boil for an hour, then add the tobacco liquor when nearly cold, and paint the Roses over with it after being pruned, and before they start into growth. Should any maggots survive this, they must be picked off as soon as discovered, and on no account be allowed to gain a footing on the plants.

Green-fly is another pest, but soon overcome by an occasional fumigation. They are easily kept under, but if allowed to spread, will seriously affect the plants.

General Attention.—I have already stated that Roses love a rich diet when in a healthy growing state. A little weak guano-water will stimulate a healthy development of foliage, and as the wood makes growth, it can be exchanged for some dry cow-dung placed on the surface of the pots, and the water poured over it. Water, into which has been placed a small portion of soot, is a good thing to give the plants, and with this administered copiously, and air admitted plentifully, even in damp days, rather than being content with a close atmosphere, which creates mildew, and predisposes the plants to be affected by green-fly, the Roses can scarcely help flourishing well.

Hard forcing should be avoided, as being detrimental to the production of well-finished blooms. Should occasion arise for some flower being urgently required, select those plants whose buds are well-swollen, plunge them into a bottom-heat of some 70° or 80° , with temperature of about 60° , and with air freely admitted during the day. Allow the plants to continue there until the most forward buds begin to expand, when they can be removed to a genial and sunny position in a warm conservatory: here the process of expanding can be completed, and the plants will retain their flowers much longer than if permitted to unfold them in the forcing-house.

Summer Treatment.—As soon as the plants have done flowering, plunge them in some suitable material in a sheltered position, where they have the advantage of the sun at least half the day, and secure perfect drainage by standing the pots on pieces of slate. Cinder ash will be found to be a good plunging material. Stake all straggling growths, so as to secure them from injury, and supply water moderately, but constantly, as required; pinch out flower-buds as they appear, and be watchful for mildew and green-fly, preventing the spread of the former by first syringing the plants with water overhead, and then dusting them with sulphur; and getting rid of the latter by syringing, and then applying Pooley's tobacco-powder.

Should the plants be allowed to remain here until the winter set in, additional covering at the roots will be required to protect them.

from frost. Some dry litter, or sawdust, or coal-ashes can be placed over the pots to the depth of about 3 inches ; but it is much to be preferred that the plants have the shelter of glass before hard weather sets in. At this period water will scarcely be required ; and when it is applied, it should only be in sufficient quantities to keep the wood from shrinking.

Plants destined for winter-blooming should be pruned, then potted, and the wood dressed with the mixture prescribed above. If the roots be dry, a soaking of water should be given, and the plants placed in a cold frame, or some other cool structure, where the buds will begin to swell ; and by the end of the year they can be put into a warm house to be pushed on into growth, or treated as prescribed in my former paper.

A. KERR.



GARDEN RECORDS.

NO. VII.

MOTTISFONT ABBEY, ROMSEY, HAMPSHIRE, THE SEAT OF LADY
BARKER MILL.

(Continued from page 274.)

THE traveller who journeys by rail from Southampton to Andover, or the pleasure-seeker who makes his annual trip by road to Stockbridge Races, must be equally familiar with the *locale* of Mottisfont Abbey, and have both admired its charming seclusion, and, especially at this period of the year, have longed to partake somewhat largely of the delicious coolness so characteristic of its watery surroundings and noble umbrageous trees. Certainly the place partakes of a pleasant greenness, even in the hottest weather, that is most refreshing, and which is produced by the abundance of water that flows through it.

A pleasant walk of a quarter of a mile from the little railway station brings us to the Romsey Lodge, where we are gratified to find her ladyship's able gardener, Mr Jones, waiting to be our escort. Proceeding up the carriage-road, the ear is struck by a rumbling sound as well as that of a rush of water ; and turning shortly to the left, we come upon a large pumphouse, in which a huge hydraulic wheel is revolving, driven round by the force of the very element that it is thus forcing in large quantities to the top of the Abbey for the supply of all its internal requirements, and also to the stables, farm, kitchen-garden, and the whole of the glass-houses. A little further on to the lawn, still to the left, flows a clear stream of cool spring water that rises from a large hole or well a little higher up. This well is about 10 feet in depth and the same in diameter, and as the water passes out from it, it falls down a slight declivity, and thus forms a pretty cascade. The flow is incessant, the stream being about 5 feet in width and 12 inches in depth, thus furnishing a supply of delicious water that would in populous localities prove a valuable boon.

Immediately in front of the east side of the Abbey runs an artificial river of about 35 feet in width and 2½ feet deep, believed to have been made in the days

of old by the monks, who were at one time the owners of the property, and which enjoys its own quiet course independent of the main river—the Test—for several miles. This river is crossed by a neat foot-bridge, by which means access is obtained to the large extent of lawn and woodland on the other side. Especially noticeable, growing on its banks, are some enormous Box-trees, which are very luxuriant here. The lawn surrounding the Abbey is studded with some noble trees of great vigour and beauty, prominent among which are two enormous specimens of the Oriental Plane, the largest of which has around its trunk a circumference of 32 feet, and breaks off into two huge stems, and measures, the one 17 feet and the other 13 feet round. The entire circumference of the branches is about 300 feet. Of the Abbey itself little information could be gathered, but it is believed to have been built in the year 1100, and that the present building constituted but one of the wings of the original edifice. To the archæologist it would, no doubt, prove a pleasing field of research, as it is scarcely possible to dig on any part of the lawn without meeting with some portion of the ancient foundations; and but a few months since a fine human skeleton, much of which was in a good state of preservation, was found in what seemed to have been an old well. The present building has its principal fronts looking north and south, and bears upon its external surface the marks of many years' exposure to our uncertain climate.

At the eastern extremity of the lawn is situate the flower-garden, which is sheltered from the wind by a capital Box hedge. The beds are filled for the summer decoration, and promise in their arrangement to produce a display at once unique and effective. Two large round beds especially we noted, that will make a sensation, each containing from 250 to 300 plants. The first had an outer ring of the new Viola, Blue Perfection, inside of which was the dwarf orange scarlet Pelargonium, Harry Hieover, and then a ring of a dark Coleus, a band of which was also carried in the form of a cross through the centre of the bed, thus leaving four spaces, that were filled with Mrs Pollock variegated Zonal Pelargonium. The other bed had an outer circle of Mrs Pollock, next that Purple King Verbena, then a ring and cross of the white-foliaged Centaurea candidissima, the quarters being filled with the deep scarlet-flowering nosegay Pelargonium Stella. Close by here is an ancient stone summer-house, a window in which has each alternate pane filled with blue or buff coloured glass. The visitor looking through the first sees all the ground covered with snow, and through the latter bright summer sunshine. There is also an ancient stone coffin standing behind the arbour.

We are now conducted across the park in a westerly direction to the kitchen-garden and forcing-houses; and as the special feature of this notice is to illustrate early fruit-forcing, we will at once proceed to describe what is done in this branch of horticulture by one of the most successful fruit-growers in the county of Hants.

Of course, in this department the Vine stands pre-eminent, and our introduction to it in its most advanced form of bearing is some pot Vines, growing in a Pine-pit, each of which carries six or seven bunches of ripe fruit. To show how speedily the Grape Vine can be made to yield produce, it will be sufficient to state that these pot Vines were started from eyes in February of last year, and were grown into a stout cane about 6 feet in length. These were again placed in heat on the 1st of November, and were cut from in the middle of April last, a period of fourteen months only. The kinds grown are Black Hamburg, Muscadine, and Buckland Sweetwater. We now turn to the earliest house of Grapes, started on the 1st of December last with heat. Here the Vines are loaded with bunches

Black Hamburgs, many of which were ready for cutting by the middle of . At one end, grafted on the Black Hamburg, is a rod of the Golden Champion, a fine new Grape, that has in this instance large berries, but small stems. It is, however, not yet ripe.

Following this is a second house of Vines that were started with heat at the end of January. Here the fruit is still quite green, but will probably be ripe at the end of June. The produce is heavy, and all that could be desired.

The sorts in this house are the Muscat Hamburg, Black Hamburg, and Buck-Sweetwater. This is again succeeded by another house of later Vines, that is fit to start in the spring without the aid of artificial heat, and which will furnish fruit for the table until the end of November. Here pot Vines are again brought into requisition. As the lower portion of the house is filled with young

Vines only, that do not cover the roof, a shelf has been erected through the middle of the house, and upon this was placed a row of fine young canes in pots, being full of fruit, effectually utilise the whole of the glass. These will be required next year, as the permanent Vines will then cover the whole space. In this house is that highly-flavoured Grape, the Duchess of Buccleuch; also two late Grapes, Mrs Pince's Black Muscat and Lady Downes; grafted upon the Black Prince, that new and superb Grape, the Madfield Court; this will fruit next year. Still another and last vinery, used expressly for later work. This house, like the preceding one, has received as the aid of no artificial heat, but will have that assistance when the fruit is beginning to colour. The sorts are Lady Downes and Muscat of Alexandria—the best of all our white Grapes—and the bunches are very fine and promising. They are allowed to hang here, for the winter supply, until the 1st of February, when the bunches are cut, with a good portion of the branch attached, the cut end of the latter being immediately sealed with wax, to prevent the exhaustion of the sap. These bunches are carefully hung in the fruit-room, and keep well to furnish a supply of Grapes till the next forced crop is ready for use.

The Pine-Apple is always in season at Mottisfont. Two large pits are devoted to its early culture, and also a large stove for fruiting it in. As soon as a fruit is cut, the plant is put into its place, and thus the supply is incessant. The kinds chiefly grown are the Queen, Black Jamaica, Providence, and the Cayennes. The fruit now ripening are fine samples, and Mr Jones's successes as a Pine-grower have often been attested at fruit exhibitions far and near. Another early fruit is

the Fig, that has a house devoted to its culture. Here the back wall is quite covered with a fine tree of Lee's Perpetual, that yields three crops during the year, the first of which was ready for gathering on the 6th of May. This early crop is borne on the old wood of last year, the second from the first young growth, and the third growth being stopped, another growth and crop follow. At the end of the year, and in the bed of it, are others planted, and amongst them are standing the very forward Peach-trees in pots, full of fruit, that will speedily yield the first gathering of this delicious fruit.

Melons are planted out in pits at Christmas, and first cut from during May. Other pits or frames are also filled for succession, and the supply of this fine fruit continued until the end of the year. The sorts in cultivation this year for the earliest are Golden Queen and Bousie's Incomparable, both green-fleshed varieties; and for succession, Broadland's scarlet-fleshed and Malvern Hall.

Strawberries in pots are grown extensively, reaching in number from 800 to 1000. The earliest are Black Prince and Keen's seedling, followed by Trollope's Victoria and Sir Charles Napier. These are grown upon shelves in nearly all the fruit-houses, every available space being utilised. The first gathering was

on the 3d of March, 40 lb. having been produced by the end of May, and the pickings are continued until the crops out of doors are ready. As soon as the pot plants have done fruiting, they are planted out in rows in the kitchen-garden where they fruit the succeeding year, after which they are removed for a vegetable crop. The annual produce under this system is enormous, the life of the Strawberry plant here being what might be termed a short and prolific one.

A Peach-house has a fine tree of Royal George covering the back wall, and two Elruge Nectarines and a Violet Hative Peach upon a semicircular trellis in the front. This house is started during December, and ripens its fruit in June. The trees are the picture of health, and full of promise. Cucumbers are grown in pots in the Pine-stove all the winter through, and with the aid of those in frame in the summer an inexhaustible supply is furnished. The Horton Prolific and Telegraph are mostly grown. In front of the Pine-stove some pot Vines from eyes are coming on; these are for fruiting next winter. After the requisite height is reached, the points are stopped, and the rod swells to the full dimensions: they are then placed in the open air to fully ripen the wood.

The kitchen-garden is very extensive, and is entirely surrounded by walls that are covered with all the best kinds of fruit-trees literally loaded with fruit. So also are the trees in the open ground, and especially so a fine row of Pear trees twenty-one in number, all of which are trained in a weeping form, and are about 9 feet in height and 7 feet in diameter. Vegetables of all descriptions are wonderful fine and abundant, and under some hand-lights were a lot of dwarf French Beans, to induce early fruiting; and on a warm border, fine well-filled pods of Sangster's No. 1 and Taber's Perfection Peas were ready for gathering. It is impossible to praise too highly the fine appearance of all the various departments, in or out of doors, at Mottisfont Gardens.

We cannot conclude this notice without alluding to the famous pollard Oak at Oakley, a small hamlet just at the extremity of the park. This tree has remarkable proportions, for at 5 feet from the ground the circumference of its trunk measures 32 feet, and a little higher there are the trunks of three huge limbs, bearing the marks of many a stout wrestle with the storms of bygone times. From these old trunks spring young and vigorous branches, in the full flow of youth and freshness, and resemble childhood linked to decrepid age. At the base of the tree, and all round it, is seen a curious development of growth, as it is circled with bark-like protuberances reaching in some instances 4 and 5 feet outwards from the base of the trunk, just as if there had been at some time or other a vegetative eruption, the excrescence partaking of the character of a woody lava that had welled up from the roots of the tree in past times. Within the trunk, which is so hollowed out by decay that but little else than the mere lining of the bark remains, a dozen men could congregate with the greatest ease. The present vigorous growth of the branches (giving it the appearance in the distance of being a young tree) can perhaps be accounted for from the fact that a branch of the river Test (which is supposed to have been diverted from the parent stream by the "monks of old," in order to secure a supply of water immediately contiguous to the abbey, the Test being nearly a quarter of a mile distant) runs very near this old tree, and no doubt its roots have found their way to the bed of the stream. The district of Mottisfont is a very moist one, as it lies low in the valley of the Test, which at Romsey pours itself into the Southampton Water.

O. S.

THE CONSTRUCTION OF ROCK-GARDENS.

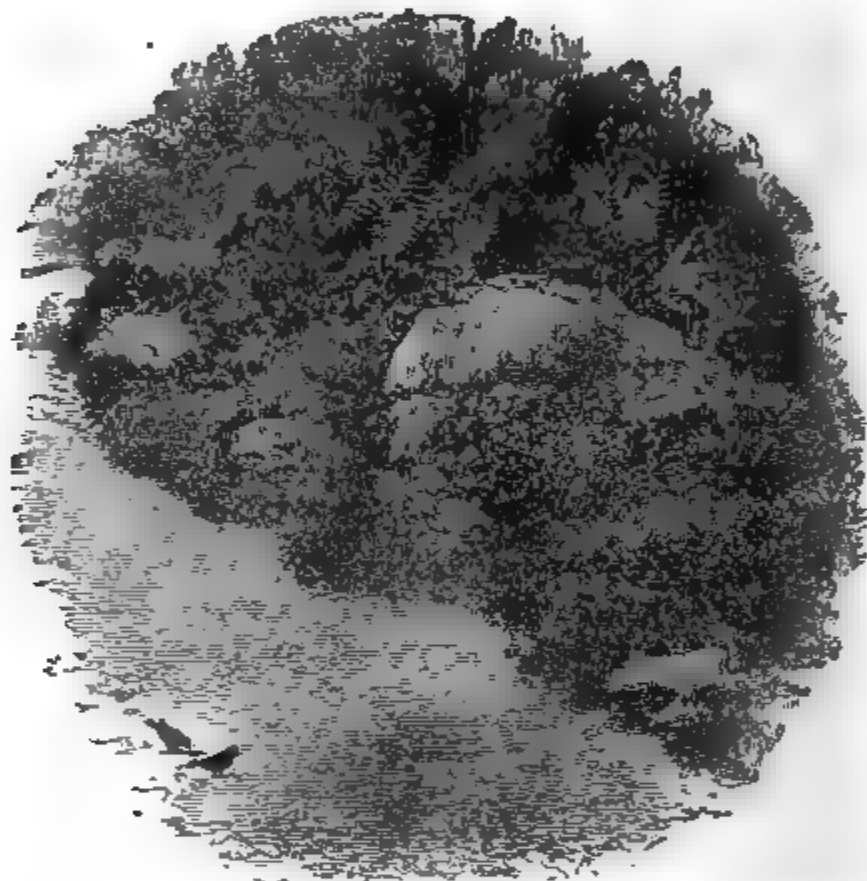
IN our last number we called the attention of our readers to Mr Robinson's interesting book on Alpine Flowers. We are now enabled to present an illustration taken from that work, bearing on the construction of rock-gardens—a feature of gardening by no means intelligently understood generally, judging from the sorry exhibitions of this kind of workmanship we sometimes meet with.

“Rockwork is,” says Mr Robinson on page 30, “as a rule, made for the display of mountain plants, or those which by their dwarfness fall into the class commonly known as Alpines. Some cover rockwork with climbing shrubs and dwarf bushes, but in every case, unless where a rock is introduced for its own effect in the landscape, the object is to grow plants. Now, as very few of the subjects alluded to like shade, or even tolerate it, it follows this is an ignorant and bad practice. Many persons who arrange such things doubtless fear the sun burning up their plants; yet the sun that beats down on the Alps and Pyrenees is fiercer than that which shines on the British garden. But while the Alpine sun cheers the plants into beauty, it also melts the snows above, and water and frost grind down the rocks into earth; and thus, enjoying both, the roots form perfectly healthy plants. Fully-exposed plants do not perish from too much sun, but simply from want of water. Therefore it cannot be too widely known that full exposure to the sun is the first condition of perfect rock-plant culture—abundance of free soil under the root, and such a disposition of the soil and rocks that the rain may permeate through and fall off the rocks, being also indispensable.

“The preceding plan can be carried out in the very smallest places. The next is quite as easily formed on the fringe of any shrubbery. An open, slightly elevated, and, if possible, quiet, isolated spot, should be chosen, and a small rock-garden so arranged as to appear as if naturally cropping out of the shrubbery. With a few cart-loads of stones and earth, excellent effects may be produced in this way. The following illustration well explains my meaning; an irregularly sloping border, with a few mossy bits of rock peeping from a swarming carpet of Sandworts, Mountain-pinks, Rock-cresses, Sedums and Saxifrages, Arabises and Aubrietias, with a little company of Fern fronds sheltered in the low fringe of shrub behind the mossy stones.

“Having determined on the position of the bed, the next thing to do is to excavate the ground to the depth of 2 feet or thereabout, and to run a drain from it if very wet. If not, it is better let alone, as a good deal of the success depends upon the beds being continually moist; and in dry soils, instead of draining, it would be better to put

in a substratum of spongy peat, so as to retain moisture for the stony matter that the cavity is to be filled with. As to soil, rock-plants are found in all sorts; but a good turfy loam, with plenty of silver sand added, will be found to suit a greater number of kinds than any other. The compost should be of a somewhat spongy character; and if not naturally so, it should be so made by the addition of well-decomposed leaf-mould, cocoa-nut fibre, or, failing these, peat. If the trees of the shrubbery are of a nature likely to send hungry roots into the mass of good compost prepared for the rock-plants, it will be desirable to dig a narrow drain to below the level of their roots, and fill it with concrete to the surface; this will prevent the Alpine plants from being



ROCK-GARDEN ON MARGIN OF SHRUBBERY.

starved by their more vigorous neighbours. The kind of stone is not an important point, and many people have to take their chance in this respect, and use that which can be got. Millstone-grit and most kinds of sandstone are good, where a selection can be made, but almost any kind will do. Vitrified material should be avoided.

“With the soil should be incorporated the smallest and least useful stones and debris among those collected for the work, so that the plants to be seated on the top may send down their roots through the mixture of earth and stone, and revel in it. When this is well and firmly done, the large stones may be placed—half in the earth as a rule, and on their broadest side, so that the mass, when completed,

may be perfectly firm. Have nothing to do with tree roots or stumps in work of this kind; they crumble away, and are at best a nuisance and disfigurement to a garden. The intervening spaces may then be filled up, half with the compost and half with the stony matter, and the smaller blocks placed in position, the whole being made as tastefully diversified as may seem desirable, taking the size of the structure into consideration. When finished, it should look like a bit of rocky ground, stones of different shapes protruding—here a straight-sided one, under the lee of which a shade-loving plant may flourish; there two in juxtaposition, between which a cliff alpine may find a place. Two or three feet high will, as a rule, be high enough for the highest points of rocky fringes of this sort, though the plan admits of considerable variation, and it may be tastefully made twice or thrice as high. In some of our public and private gardens, want of means is given as an excuse for the presence of the hideous pock-marked potato-pit-like masses of rockwork that disfigure them. The plan now recommended is much less expensive than these as it is less offensive!”

“While many have old ruins and walls on which to grow Alpine plants, others will have no means of enjoying them this way, but all may succeed perfectly with the plan suggested in the accompanying illustration. By building a rough stone wall, and packing the intervals as



only as possible with loam and sandy peat, and putting, perhaps, a little mortar on the outside of the largest interstices, a host of brilliant plants may be grown with almost as little attention as we bestow on the common Ivy. Thoroughly consolidated, the materials of the wall would afford precisely the kind of nutriment required by the plants. The wall would prove a more congenial home to many species than any but the best-constructed rock-garden. In many parts of the country the rains would keep the walls in a sufficiently moist condition, the top being always left somewhat concave; in dry districts, a perforated copper pipe laid along the top will diffuse the requisite moisture. In very moist places, natives of wet rocks and trailing plants, like the *Linnaea*, might be interspersed here and there among the other Alpines; in dry ones it would be desirable to plant chiefly the Saxifrages, Sedums,

small *Campanulas*, *Linarias*, and subjects that, even in hotter countries than ours, find a home on the sunniest and barest crags. The chief care in the management of this wall of Alpine flowers would be in preventing weeds or coarse plants from taking root and overrunning the choice gems. When these are once observed, they can be easily prevented from making any further progress by continually cutting off their shoots as they appear; it would never be necessary to disturb the wall even in the case of a thriving *Convolvulus*. The wall of Alpine plants may be placed in any convenient position in or near the garden; there is no reason why a portion of the walls usually devoted to climbers should not be prepared as I describe. The boundary-walls of multitudes of small gardens would look better graced by Alpine flowers than bare, as they usually are. However, once it is generally known that the very walls may be jewelled with this exquisite plant-life, it need not be pointed out where opportunities may be found for developing it."



NEW PLANTS OF THE PAST MONTH.

AMONG Palms—and we are constantly receiving some beautiful things in this way—the following have received first-class certificates: *Oncospermum Van Houtteii*, *Pritchardia pacifica*, and *Raphis humilis*, from Messrs Veitch & Sons; *Korthalsia robusta* and *Bactris marissa*, from Messrs Rollisson & Sons; *Geonoma elegans*, *Geonoma speciosa*, *Welfia regia*, and *Cycas Armstrongii*, from Mr William Bull,—all valuable additions to these beautiful decorative plants.

Then of foliaged plants the following new species have received the same award: *Pandanus decorus* and *Anæchtochilus pardina*, both from Mr William Bull, the former novel in character, the latter prettily marked; *Pandanus Veitchii*, *Dieffenbachia Bowmannii*, *Aralia Veitchii*, *Ficus dealbata*, a large, broad, deep-green-leaved species, the under side of the leaves being of a beautiful silvery white; and *Cyanophyllum spectandrum*, from Messrs Veitch & Sons.

New Orchids do not now appear so frequently as they did two and three months ago. Foremost stands Mr Dominy's new Hybrid *Cypripedium Dominianum*, raised at Messrs Veitch & Sons' nurseries from a cross between *C. caudatum* and *C. Pearcei*; and a very prettily-spotted *Ærides maculatum*, from the same exhibitors, to each of which first-class certificates were awarded; also to *Trichopilia crispa marginata*, a very handsome Orchid, with a large deep claret-coloured lip, and with bronze white-edged undulated petals and sepals, from Mr B. S.

Williams ; and to *Gongora portentosa*, a new pink-and-yellow flowered species, from W. Wilson Saunders, Esq.

In the way of hardy ornamental plants, Messrs Veitch & Sons received a first-class certificate for a fine deep copper-coloured-leaved variety of the sticky Alder, named *Alnus glutinosa rubronorva*, very handsome, and likely to become highly useful.

Of flowering plants, first-class certificates were awarded to *Hydrangea stellata flore-pleno*, a small-growing and double-flowered species, with pale-green and rose-coloured leaves, from Messrs Paul & Son ; to *Clematis Sylph*, white, very slightly tinted on the outside of the petals with mauve, a fine early-blooming variety from Messrs T. Cripps & Son ; to *Gloxinia Alice*, with plum-purple lobes and pale sulphur throat, a very fine deep-coloured variety, from Messrs Rollisson & Son ; to *Azalea Roi d'Hollande*, from Mr C. Turner, with large deep crimson-scarlet flowers, very showy, and of fine colour ; to Mr E. Shenton, Biggleswade, for a white early-forcing Pink, named Flower of Eden ; to Mr H. Cannell, Woolwich, for a bright deep-pink-coloured *Pelargonium* named Master Christine, with the habit of the old Christine, and very free of bloom ; and to the following charming plants, from Mr William Thompson of Ipswich—viz., *Brodiaea coccinea* (?), with magenta crimson flowers and a green tip, not unlike those of a *Correa* ; *Cyclobothra pulchella*, a half-hardy Liliaceous plant from California, with curious yellow flowers, but by no means new, having been introduced in 1832 ; *Delphinium nudicaule*, a hardy perennial, nearly allied to *D. cardinale*, but said to be more certain, and bearing spikes of bright orange-red flowers,—this was raised from seeds sent to Mr William Thompson from California ; and to *Leptosiphon roseus*, a hardy Californian annual, exceedingly dwarf, and bearing numbers of charming rose-coloured flowers. This is a great acquisition, and will no doubt become very popular.

The following fine show *Pelargoniums* of Mr Foster's raising have received first-class certificates : May Day, Syren, Iron Duke, Charlemagne, and Admiration ; also Duke of Edinburgh (Hoyle), a fine painted flower ;—all exhibited by Mr Turner. These will be noticed more fully by-and-by.



HORTICULTURAL EXHIBITIONS.

CRYSTAL PALACE, SYDENHAM, May 21.—“A grand Show” was the general comment made on this fine Exhibition, and it was well deserved. The collections of stove and greenhouse plants were very fine, and, as a matter of course, much admired. Mr Baines, gardener to H. L. Micholls, Esq., formerly of Manchester,

but now of Southgate, won the leading prize with 15 superbly-grown plants consisting of *Hedera*—or, as it is now termed, *Darwinia tulipifera*—*Erica ventricosa coccinea*, *Aphelexis macrantha purpurea* and *A. humilis rosea*; *Boronia pinnata*, a grand *Ixora coccinea*, *I. aurantiaca*, equally fine; *Epacris Eclipse*, *Clerodendron Balfourii*, *Erica Cavendishiana*, *Eriostemon nerifolius*, *Azalea Iveryana*, a magnificent example; *A. coccinea*, *Bougainvillea glabra*, and *Anthurium Scherzerianum*, having 13 fine flowers. Mr Chapman, gardener to J. Spode, Esq., Rugeley, was second, who now finds in Mr Baines a foe worthy of his steel. Mr B. S. Williams was first in the nurserymen's class. Cape Heaths and Azaleas made a nice display, but both have been seen in finer condition. Messrs Jackson & Sons, who have long had a good reputation as cultivators of *Ericas*, had the following eight in the nurserymen's class, and took the first prize:—*Tricolor Wilsoni*, *Tricolor dumosa*, *Ventricosa coccinea minor*, *Victoria*, *Perspicua nana*, *Depressa multiflora*, *Picturata*, and *Marnockiana*.

Orchids were neither numerous nor of extra quality. Some of the gems were *Cypripedium barbatum superbum*, *Odontoglossum luteo-purpureum*, *Cattleya Mossiæ superba*, *Vanda suavis*, *Dendrobium densiflorum*, *Phalænopsis grandiflora*, *Oncidium serratum*, *O. bicktonense*, and *O. bifolium*. In the nurserymen's class, Mr B. S. Williams had the best ten, and in the amateurs' classes, Mr J. Burnett, gardener to W. Terry, Esq., Fulham, had the best twenty; and Mr Ward, gardener to F. G. Wilkins, Esq., Leyton, the best ten.

Pelargoniums, both show and fancy kinds, were fine, the last being superbly flowered. The best Roses in pots came from Mr C. Turner, and Messrs Paul & Son had the second best. In the way of miscellaneous plants, Mr T. S. Ware, Tottenham, contributed an excellent lot of hardy variegated and flowering plants, many of which were of a highly interesting character; and Mr Turner sent a collection of Tulips, which were much admired for the richness of their colouring. Altogether, it was a most successful Exhibition.

ROYAL BOTANIC SOCIETY, REGENT'S PARK, May 25.—This, the first of the great shows held at the Regent's Park, followed only four days later, and some of the plants seen at the Crystal Palace also put in appearance here. A new arrangement of the schedule had curtailed it of some of the classes for stove and greenhouse plants, &c., and instead thereof, prizes were offered for groups of plants arranged for effect, certain recesses of the large tent being appropriated for the purpose. They were to be arranged as for the decoration of a small conservatory, with climbers, hanging baskets, vases, and other accessories. As far as any practical value attached to these groups, the result was somewhat disappointing, as might perhaps have been expected. Such things as Palms, Ferns, Orchids, and flowering plants generally, were used, but little came of it. Messrs J. C. Lee had the best group, Messrs A. Henderson & Co. came next, and Messrs Rollisson & Sons third. Prizes were also offered for effective groups of bedding-plants; and *Coleuses*, *Echeverias*, the yellow *Pyrethrum*, *Pelargoniums*, &c., were differently arranged by each exhibitor. Messrs E. G. Henderson & Son had the best group; Mr Ware came next, depending mainly on hardy and variegated-leaved plants; and Mr Aldred was third.

Stove and greenhouse plants were of a similar character to those seen at Sydenham. They were very good, and made an excellent display. Cape Heaths were similar also, so were the Azaleas to a great extent, and so were the *Pelargoniums*. The Orchids, of average quality, appeared to the best advantage shown on one of the grassy slopes, as is usually the case at the Park. Particularly good were *Dendrobium nobile*, *Calanthe veratrifolia*, with eight fine spikes of flowers; *Saccolabium*

retusum, with spikes over 2 feet in length ; *Phalænopsis grandiflora*, shown as the best specimen Orchid by Mr Fairbairn of Syon House, one spike having twenty expanded flowers ; *Oncidium sarcodes*, *Vanda suavis*, and *Cattleya Mossiæ*.

New and rare plants always form a considerable feature at the Regent's Park, and on this occasion a large number were staged. Among Palms, the most striking were *Verschaffeltia melanochætes*, a fine and rare species ; *Areca nobilis*, *Dicksonia nobilis*, *Thrinax havanensis*, very elegant ; *Geonoma elegans*, *Chamædorea spectabilis*, remarkable for its few broad pinnæ, and *Dæmonorops plumosus*, remarkably elegant and free-growing. Other new plants of a striking character consisted of *Cupressus Lawsoniana erecta viridis*, a fine Evergreen ; *Dracæna excelsa*, a handsome South Sea Island plant, with broad recurved leaves of a deep bronzy tint variegated with rosy red ; *Oncidium cryptocopis*, with deep claret red flowers, having a narrow border of yellow ; *Phormium Colensoi variegatum*, *Adiantum Veitchii*, a beautiful Maidenhair Fern ; the handsomely-marked *Dieffenbachia Bowmanni*, *Tillandsia Lindeniana*, *Cochliostema Jacobianum*, and a very handsome curled and dwarf-growing form of *Lomaria Gibba*, named *Crispa*.

ROYAL HORTICULTURAL SOCIETY, June 8.—This was a very fine exhibition, perhaps the finest London show yet held, as the quality of many of the things staged was very good indeed : stove and greenhouse and fine-foliaged plants, together with Orchids, made a grand display. There was one class for twenty stove and greenhouse plants grown in 12-inch pots, which brought some superb young specimens. Messrs Jackson & Sons, Kingston, had the best group, the most conspicuous examples being *Erica Cavendishiana*, *E. ventricosa grandiflora*, a perfect picture of health and beauty ; *E. ventricosa coccinea minor*, *Clerodendron Balfouri*, the bright-flowered *C. Kæmpferi*, together with *Aphelaxes*, *Azaleas*, &c. Other good examples of stove and greenhouse plants included *Kalanthes* Frederick Desbois and *K. Phœnice*, both very attractive ; *Bougainvillea glabra*, a fine white-flowered *Vincaocellata* ; *Franciscea Eximea* ; *Adenandra fragrans*, a well-flowered plant of *Begonia parviflora* ; *Allamanda nobilis*, very fine ; *Dipladenia amabilis*, *Dracophyllum gracile*, and *Leschenaultia biloba major*. Perhaps better-grown specimens of fine-foliaged plants were never before seen than some of these staged on this occasion. In the open class for nine distinct plants, Mr Baines, gardener to H. L. Micholls, Esq., was first with a splendid example of *Nepenthes Rafflesiana*, with over two dozen handsome pitchers of great size ; *Alocasia metallica*, extremely fine ; *Gleichenia speluncæ*, *Croton angustifolium*, *C. variegatum*, *Verschaffeltia splendida*, said to be the finest example ever shown ; *Stevensonia grandiflora*, *Theophrasta imperialis*, and *Dasyllirion acrotrichum*. Other fine examples were *Phoenix farinifera*, *Latania borbonica*, *Alocasia zebrina*, *Anthurium acaule*, and a grand specimen of *Thamnopteris nidus*.

Orchids, though very fine, were not quite up to the mark at which they were shown at Manchester. Mr Denning, gardener to Lord Londesborough, sent the best 9 in the open class, comprising *Ærides odoratum* var., a fine specimen, with 16 beautiful spikes ; *Ærides affine*, very good ; *Epidendrum vitellinum majus*, with 11 richly-coloured spikes ; *Cattleya Warneri*, very fine ; *Lælia purpurata*, beautifully coloured ; *Dendrobium crystallinum* ; *D. M'Carthyæ* ; a four-spiked specimen of the pretty spotted *Odontoglossum niveum* ; and the curious *Pescatorea cerina*. The second best lot came from Mr Burnett, gardener to W. Terry, Esq., Fulham ; and the third from Mr W. Bull, Chelsea. From the former came a very fine specimen of *Cypripedium barbatum superbum* ; a good example of the pretty rosy crimson *Saccolabium ampullaceum*, and an excellent *Cattleya Mossiæ*, &c. Mr Bull sent *Odontoglossum citrosmum* and *O. citrosmum roseum*, *Lælia Brysiana*,

and *L. purpurata splendens*, &c., in very nice condition. The best 6 in the nursery-men's class were contributed by Mr B. S. Williams, and consisted of a splendid specimen of *Cypripedium barbatum superbum*, nearly 3 feet over; grand examples of *Cattleya Mossiæ* and *C. Warneri*; *Lælia purpurata*, two fine spikes of richly-coloured flowers; *Ærides odoratum*, a very healthy specimen; and *Anguloa Clowesii*. Mr W. Bull, who had amongst others a fine specimen of *Trichopilia tortilis*, was 2d. In the amateurs' class for the same number, Mr Denning was again to the fore with *Dendrobium Parishii*, very beautiful; *Lælia purpurata*, with four admirable spikes, two very nice *Ærides*, &c.: Mr J. Ward, gardener to F. G. Wilkins, Esq., Leyton, who had two good *Cattleyas*, *Oncidium bifolium*, *Anguloa Clowesii*, with eight grand flowers, and a very fine *Phalænopsis grandiflora*, being 2d. The best single specimen was *Dendrobium Devonianum*, with four magnificent spikes, about 30 inches long, from Mr T. Baines; the second being a remarkably handsome *Lælia purpurata* from Mr R. Laing, gardener to P. W. Flower, Esq., Furze Down, Tooting Common.

The best 6 variegated Zonal Pelargoniums shown on this occasion came from Messrs Carter & Co. They consisted of *Fairyland*, *Aurora*, *Sophia Cusack*, *Lady Cullum*, *Prince of Wales*, and *Mrs Dunnett*.

There was a very nice show of fruit, but so crowded were the tables, it was very difficult to get near it. The best Pine-Apple was a *Queen*, weighing 6 lb., from Mr Ward, Bishop-Stortford, a good smooth-leaved Cayenne coming in second best. Mr Douglas, of Loxford Hall Gardens, sent the best dish of Black Grapes, superb Black *Hamburgh*, fine in berry, bunch, and colour. The best White Grapes were *Buckland Sweet Water*, also from Mr Douglas; the next best, *Muscat of Alexandria*, from Messrs Standish & Co. The finest Peaches were *Royal George*, *Stirling Castle*, and *Bellegarde*. The best Nectarines, *Violette Hative*, *Elruge*, and *Brugnon*. Strawberries and Cherries were also good; among the former, *British Queen* and *La Constante* were particularly noticeable.

MANCHESTER BOTANICAL AND HORTICULTURAL SOCIETY, June 3.—Even the great things Manchester has done in time past were eclipsed on this occasion, when Manchester held what was considered to be the finest show that has ever taken place in that city. There were some weak points, such as *Roses*, *Fuchsias*, *Ericas*, *Pelargoniums*, &c.; but these were more than counterbalanced by the splendour of the *Orchids*, stove and greenhouse and fine-foliaged plants, *Ferns*, &c., all of these being very fine. Our limited space will not admit of our doing justice to this fine Show. We may note, however, that prizes were offered for collections of 50 Alpine plants, though on this occasion the term Alpine was somewhat largely interpreted, as it included many things generally excluded from lists of Alpine plants. Messrs Backhouse & Sons were first with a most interesting group, containing *Aquilegia Alpina*, *Dianthus sylvestris*, *Viola pedata*, *Lychnis* or *Petrocoptis Lagascae*, with pretty glowing pink flowers and a very dwarf habit; *Armeria montana*, *Linaria origanifolia*, *Lithospermum prostratum*, *Iberis coriacea*, *Arenaria montana*, *Aquilegia glandulosa*, *Primula cortusoides amœna*, *Saponaria ocymoides*, *Rosa pyrenæica*, *Aubrietia Campbellii*, *Saxifraga longifolia*, and *Erinus hirsutus*. Messrs G. and W. Yates, who were second, had the new *Spirea palmata*, *Silene montana*, *Polygonum Viviparum*, *Silene alpestris*, *Papaver croceum*, *Aster Alpina*, and *Dodecatheon media alba*. Messrs Stansfeld & Sons came third with *Pinguicula grandiflora*, *Gentiana verna*, *Primula farinosa*, *Cheiranthus Marshallii*, *Viola amœna*, *Iberis Gibraltaria*, and *Veronica saponaria*; a very excellent lot, as the species and varieties named give the very cream of the three collections.

Mr Ward, gardener to T. N. Miller, Esq., Bishop-Stortford, staged five magnificent Pine Apples—viz., Queen's, Black Prince, and Envilles; and was first for 3 and 2 fruits respectively. Mr Potts, gardener to J. Knowles, Esq., had some of the most finely-finished Black Hamburg Grapes we have yet seen, grown on the spur system.

CRYSTAL PALACE, SYDENHAM, June 11.—The ordinary leading plants of a great show, somewhat the worse for wear in consequence of being knocked about at several exhibitions, came out indifferently here in consequence. The leading features were the table decorations and the variegated Pelargoniums. As a general rule, the former were much too elaborate and heavy. There was too much material in them—a very common fault. There were plenty of them, and they were arranged on tables running along the centre of the nave.

The best 12 variegated zonal Pelargoniums came from Mr Stevens, and consisted of Imperatrice Eugenie, Charming Bride, Glen Eyre Beauty, Italia Unita, Mabel Morris, and Gamos, silver-edged; and Lady Cullum, Mrs Turner, Lucy Grieve, Sophia Dumaresque, Sophia Cusack, and Countess of Tyrconnell, golden-edged. The best 6 Gold and Bronze Zonals came from Messrs Downie, Laird, & Laing, and were Prima Donna, Imperatrice Eugenie, Mrs Allan Lowndes, Red Gauntlet, Crown Prince, and Black Douglas—all of their own raising. The next best were Countess of Kellie, Black Knight, Cleopatra, Sybil, Red Ring, and Stanstead Beauty. The best golden-edged variegated Zonal was Prince of Wales, shown by Messrs Carter & Co.; the next best, Ealing Rival; the third best, Achievement. Mr Turner had the best and second-best silver-edged variety, in the former case staging Miss Pond, very fine; and Mrs Rousby, very good also. The best variegated Pelargonium—viz., with green leaves edged with white—was Bright Star, from Mr Turner; the second-best, May Queen. The best gold and bronze Pelargonium was Reine Victoria—a beautiful variety, furnished by Messrs Downie, Laird, & Laing. The best double-flowered Pelargoniums were: Wilhelm Pfitzer, E. G. Henderson, Triomphe, Madame Lemoine, Marie Lemoine, and Merveille de Lorraine.

Most charming and deeply interesting was a group of Ixias, Sparaxis, Iris, Tritonias, and many other beautiful plants of a similar character, staged by Messrs Hooper & Co., Covent Garden. Similar groups were also staged by this firm at the great show of the Royal Horticultural Society. There was so much of freshness and novelty about them that no wonder crowds of admirers were continually in front of them: it was a fitting homage paid to some very beautiful but sadly neglected plants.

ROYAL NATIONAL TULIP-SHOW.—The special character of this exhibition requires we should give its details rather more space than we usually allot to horticultural shows. It was held at Cambridge, on the pleasant grounds of King's College, on the 25th of May last, in connection with the first great show of the Cambridge Horticultural Society. The itinerant character of this Society is well known to many of our readers, holding its meetings in one locality one year, and in another the following year, the arrangements being conducted by a local committee appointed for the purpose.

The premier prize was a silver cup, value 5 guineas, for the possession of which there were five competitors, offered for 12 Tulips, 4 each of Bizarres, Bybloemens, and Roses, two feathered and two flamed flowers of each. This was won by Mr S. Barlow of Manchester with a fine stand of flowers, containing the following varieties:—

Bizarres—Garibaldi and Royal Sovereign, feathered ; Sir J. Paxton and Polyphemus, flamed : **Bybloemens**—Martin's 101 and Talisman, feathered ; Duchess of Sutherland and Bacchus, flamed, the last a superb flower. **Roses**—Mrs Lea and Charmer, feathered ; Aglaia and Rose Celestial, flamed. 2. Mr Richard Headly, Stapleford, with **Bizarres**—Demosthenes and Richard Headley, feathered ; Prince of Wales and Dr Hardy, flamed : **Bybloemens**—Mrs Pickerell and W. E. Gladstone, feathered ; John Kemble and John Thorniley, flamed. **Roses**—Sarah Headly and Queen of Beauty, feathered ; Semiramis and Circe, flamed. 3. Mr D. Barber, Derby, with **Bizarres**—Sir Charles Napier and Jacomb's Perfection, feathered ; Sir J. Paxton and Dr Hardy, flamed : **Bybloemens**—Exile and Mrs Pickerell, feathered ; Constancy and Duchess of Sutherland, flamed. **Roses**—Heroine and Mr Lomax, feathered ; Mary Barber and Triomphe Royale, flamed. 4. Mr W. Lea, Leigh, with **Bizarres**—Lord Byron and Sir J. Paxton, feathered ; Everard and Dr Hardy, flamed. **Bybloemens**—Queens of the North and Adonis, feathered ; Talisman and Adonis, flamed. **Roses**—Aglaia and Sarah Headly, flamed ; Industry and Heroine, feathered. The remaining exhibitor was Mr John Serjeant, Haslingfield.

The next class, for twelve Tulips, consisting of four blooms each of the three classes, brought seven competitors, one or two of whom were disqualified from having too many blooms of one class. Here the Rev. S. Cresswell, of Nottingham, was placed first, with **Bizarres**—George Hayward and Storer's Seedling, feathered ; Sir J. Paxton and Dr Hardy, flamed. **Bybloemens**—Nepaulese Prince, and Lord Denman, feathered ; Duchess of Sutherland and Adela, flamed. **Roses**—Vicar of Radford and Heroine, feathered ; Aglaia and Heroine, flamed. 2. Mr William Willison, Whitby, with **Bizarres**—John Sanderson and Royal Sovereign, feathered ; Seedling 1283 and Sir J. Paxton, flamed. **Bybloemens**—Sarah (Leach) and Mrs Sharp, feathered ; Eliza (Willison) and Nepaulese Prince, flamed. **Roses**—Queen and Juliet, feathered ; Seedling 380 and Juliet flamed. 3. Mr Thomas Haynes, Derby, having of **Bizarres**—Sir J. Paxton and Orion, feathered ; and Lord Palmerston and Sir J. Paxton, flamed. **Bybloemens**—Beatrice and Van Amburgh, feathered ; Mrs Cobden and Sarah Ann, flamed. **Roses**—Heroine and Orion, feathered ; Rose Celestial and Lady C. Gordon, flamed. 4. Mr G. Pickerell, Nottingham. It may be stated that exhibitors contending for the cup could not appear also in this class.

The next class was for six dissimilar Tulips, one feathered and one flamed of each class. 1. Mr D. Barber, Derby, with **Bizarres**—Royal Sovereign, feathered, and General Lee, flamed. **Bybloemens**—Mrs Pickerell, feathered, and First-Rate, flamed. **Roses**—Heroine, feathered, and Rose Celestial, flamed. 2. Mr G. Pickerell, Nottingham, with **Bizarres**—Storey's Model, feathered, and Sir J. Paxton, flamed. **Bybloemens**—Mrs Pickerell, feathered, and Duchess of Sutherland, flamed. **Roses**—Heroine, feathered, and Aglaia, flamed. 3. Mr William Willison, Whitby, with **Bizarres**—Henry Steward, feathered, and Sir J. Paxton, flamed. **Bybloemens**—Leach's Sarah, feathered, and Queen, flamed. **Roses**—Inimitable, feathered, and Captivation, flamed. 4. Mr J. P. Sharp, Birmingham. 5. Mr R. Headly, Stapleford. 6. Mr T. Haynes, Derby. Nine collections competed here.

Class 4 was for three feathered Tulips, one of each class ; and here twelve competitors tried their strength. Mr Lea, of Leigh, was first, with **Bizarre**—Sir J. Paxton : **Bybloemen**—Adonis : **Rose**—Heroine. 2. Mr J. P. Sharp, Birmingham, with **Bizarre**—Sir J. Paxton : **Bybloemen**—Adonis : **Rose**—Industry. 3. Mr T. Haynes, Derby, with **Bizarre**—Masterpiece : **Bybloemen**—Mr Pickerell : **Rose**—Heroine. 4. Mr S. Barlow, Manchester, with **Bizarre**—Seedling : **Bybloemen**—

Let Amiable : Rose—Heroine. 5. Mr W. Lea, jun. 6. Mr D. Barber, Derby.

Class 5 was for three flamed Tulips, one of each class, which brought ten stands of flowers. 1. Mr T. Haynes, with Bizarre—Dr Hardy : Bybloemen—Lord Arman : Rose—Triomphe Royale. 2. Mr William Willison, Whitby, with Bizarre—Sir J. Paxton : Bybloemen—Willison's Queen : and Rose—Inimitable. Mr J. D. Hextall, Ashby-de-la-Zouch, with Bizarre—Prince of Wales : Bybloemen—Duchess of Sutherland : Rose—Aglaia. 4. Mr Pickerell, Nottingham, with Bizarre—Storer's Orion : Bybloemen—Duchess of Sutherland : Rose—Aglaia. Mr Shorthouse. 6. Mr J. P. Sharp.

Class 6 was for one feathered and one flamed flower of any class, and brought on competitors. 1. Mr S. Barlow, with Talisman, flamed Bybloemen, and Heroine, feathered Rose, the last a beautiful flower. 2. Mr J. D. Hextall, with Duke of Devonshire, feathered Bizarre, and Aglaia, flamed Rose. 3. Mr J. P. Sharp, with Heroine, feathered Rose, and Triomphe Royale, flamed Rose. 4.

G. Pickerell, with Aglaia, flamed Rose, and Chellaston Beauty, feathered Bybloemen. 5. Mr T. Haynes, with Masterpiece, feathered Bizarre, and Prince of Wales, flamed Bizarre. 6. Mr W. Willison, with Sir J. Paxton, flamed Bizarre, and Henry Steward, feathered Bizarre.

Class 7 was enough to drive the judges to despair. It required the best single blooms of each of the six classes ; and eight prizes, in all 48 prizes, were given in each class. Altogether 186 flowers were staged : of flamed Bizarres, 39, the best being Seedling 1224, from Mr Willison, a flower of very fine quality and superbly marked. 2. Mr Willison, with Henry Steward. 3. Mr Wardle, with Lord Sydney. 4. Mr J. Hague, with Lord Sydney. 5. Mr Hextall, with Charles

6. Mr S. Barlow, with Royal Sovereign. 7. Mr S. Barlow, with Pactolus. Mr Wardle, with Sir J. Paxton.

Here our record of the exhibitors' names ceases in relation to these classes, as cards had not been placed on the flowers at the time of leaving the grounds. We, however, give the names of the winning flowers : *Flamed Bizarres*.—1. Ajax ; Pilot ; 3. Dr Hardy ; 4. Ajax ; 5, 6, and 7. Sir J. Paxton ; 8. Shakespeare. *Feathered Roses*.—1, 2, 3, 4, and 5. Heroine ; 6 and 7. Mrs Lea ; 8. Charmer. *Flamed Roses*.—1. Aglaia ; 2. Mrs Lomax ; 3 and 4. Aglaia ; 5. Incomparable Nano ; 6, 7, and 8. Lady C. Gordon. *Feathered Bybloemens*.—1. Adonis ; 2. Let Amiable ; 3. Bugart ; 4 and 5. Beatrice ; 6 and 7. Adonis ; 8. John Thorpe. *Flamed Bybloemens*.—1. John Linton ; 2. Violet Sovereign ; 3 and 4. Duchess of Sutherland ; 5. Adonis ; 6. Duchess of Sutherland ; 7. Excelsior ; 8. Lord Denman.

The Breeders' classes were a somewhat interesting feature, seeing that it was practically a show of self-Tulips. Some of the violet and purple flowers were very striking. In class 9, with six breeder plants, two of each class, Mr R. Headly was first with a fine lot of blooms, all of perfect form ; in fact, Mr Headly is very strong in breeders this season, one bed at Stapleford being very fine on the occasion of our visit ; 2. Mr T. Haynes, Derby, with some good flowers, among which Parker's Rose of England stood out very distinct as an extremely beautiful flower from a breeder ; 3. Mr S. Barlow ; 4. Mr W. Lea. Ten other stands also competed. Though six prizes were offered for stands of three breeder Tulips, but four competitors entered the list. The best three were from Mr W. Willison ; 2. Mr S. Barlow ; 3. Mr Shorthouse, in whose stand there was a splendid bloom of Indus, the colour being very fine ; 4. Mr T. Haynes. The best single bloom of a breeder Tulip in the show came from Mr Headly ; the premier feathered Tulip was Bybloemen Mrs Pickerell, from Mr S. Barlow ; the premier flamed Tulip

Bizarre Sir J. Paxton, from Mr D. Barber. A stand of species of Tulips, furnished by Mr J. J. Chatter, was extremely interesting for the curious and uncouth appearance presented by some of them; they comprised the rich rosy crimson-coloured Tulipa Gesneriana, T. viridifolia, T. carinata rubra, T. carinata violacea, T. Clusiana, T. Persica, T. cornuta, and one of those singular monstrosities known as the Parrot Tulips. The judges of Tulips were Messrs Storer, John Ball, Royal Nursery, Slough; and Mr Picard—a judge being taken from the north, midland, and southern districts. Their task was an exceedingly onerous one, but they discharged it well and patiently.

The 'Gardener's Magazine' thus describes the appearance of the tent during the process of staging the flowers:—"Meanwhile the tent in which the Tulip-growers were arranging their flowers had been for some time the scene of great activity. There were veteran growers, with grey hairs, failing sight, and stooping gait, and yet as full of fire and enthusiasm as ever they were in the whole history of their cultivation of these gorgeous flowers; and there were young men, on whose shoulders the cares of manhood were just beginning to press, bending over their flowers, giving a touch here or a finishing-stroke there, watching with keen and anxious glance the while the flowers of his neighbour, and calculating the chances of success. Who shall say there is a lack of floral enthusiasm among us? and if he should see a Tulip show, he will soon learn his inference had been too hastily drawn. To stand at the entrance to this tent and watch what was going on within was a study of human nature, and well worthy the attention of a philosopher. For several hours the one absorbing passion was the best arrangement of a stand of flowers so as to win a prize: the value of the prize was of small moment—it was the *winning* the prize for which all strove. At length, and not till the sun had reached its meridian, was the tent cleared, and then only by the exhibition of some authority, as each exhibitor seemed extremely loath to leave the flowers he had tended with so much care and regard; and at last the judges were enabled to commence their work, and no one envied them the task set before them."

Mr Thomas Haynes of Derby has very kindly forwarded critical remarks on some of the leading flowers staged on this occasion, which we are obliged to postpone to next number.

SCOTTISH PANSY SOCIETY.—The twenty-sixth annual show and competition of this flourishing Society took place in one of the side-rooms of the Music Hall, Edinburgh, on Friday the 17th ult. As compared with former years, the show was in every respect a most successful one, the entries being more numerous, and the quality of the flowers higher, than on any previous occasion. This was especially noticeable among Fancies, many of the new flowers being quite round, and beautifully marked.

The following is the prize-list:—

NURSERYMEN.

Best twenty-four dissimilar Blooms—

1. Messrs Downie, Laird, & Laing, West Coates, Edinburgh, with Beauty, Eclat, J. B. Downie, Finale, J. Currie, Jessie Dick, Adonis, Lady L. Dundas, Cherub, Lavinia, Miss Muir, J. C. Champion, George Keith, Snowdrop, R. Burns, Locomotive, Bonny Jean, Jane Wilson, Miss Addison, John Downie, Mr Forbes, George Muirhead,

Princess of Wales, George Wilson; 2. Messrs Dickson & Co., Edinburgh; 3. Mr William Paul, Paisley.

PRACTICAL GARDENERS AND AMATEURS.

Best eighteen Blooms—1. Mr John Fraser, Belmont, with Dux, Comus, Lavinia, Mary Lamb, Miss Muir, Cupid, Elvina, Queen, Lady L. Dundas, George Wilson, Waverley, Chancellor, Princess of Wales, Robert Burns, John Inglis, Emily Lyle, George Keith, Andrew

with; 2. Mr Wm. Old, Roslin; 3. Mr J. Kerr, Glencorse; 4. Mr J. Beveridge, Stewartfield.

Best twelve Blooms—1. Mr R. Cuthbertson, Corstorphine, with John Currie, Lavinia, Novgorod, Mary Lamb, Maggie Grieve, Band of Hope, Cherub, B. Downie, Robert Burns, Isa Craig, Chancellor, John Beveridge; 2. Mr J. Beveridge; 3. D. Kerr; 4. J. Fraser.

Best six blooms—1. D. Kerr, with Lady L. Dundas, George Wilson, Masterpiece, Victor, Princess of Wales, Locomotive, Miss Addison; 2. F. Lightbody, Esq., 2 Hampton Terrace; 3. J. Fraser; 4. W. Old.

AMATEURS ONLY.

Best twelve Blooms—1. Mr Adam Dun, Corstorphine, with Arab, Allan Ramsay, Mrs Hopkins, Miss M. Carnegie, Locomotive, Snowdrop, Clipper, Eclat, Francis Lightbody, Prince of Wales, Princess of Wales, Joseph James; 2. F. Lightbody, Esq.; 3. George Muirhead, Esq., The Vale, Gifford.

Best six Blooms—1. R. Cuthbertson, with John Currie, Lavinia, Snowdrop, Miss Muir, Princess of Wales, J. B. Downie; 2. Hugh Adair, Esq., 4

Hampton Terrace; 3. R. Ritchie, Penicuik.

Best four Blooms—1. Hugh Adair, Esq., with Masterpiece, Geo. Muirhead, John Currie, Lady L. Dundas; 2. R. Ritchie.

Silver Medal offered by F. Lightbody, Esq., for the best eighteen Blooms, gained by Hugh Adair, Esq.; in this lot there were fine Blooms of Miss Addison, L. T. Fleming, Snowdrop, John Currie, Lavinia, &c.

Best four Yellow grounds, four White grounds, four Selfs—1. Wm. Moffat, Esq., Kinleith, with A. M'Nab, Cherub, Snowdrop, Finale, Comus, G. Muirhead, Czar, Robert Burns, Alice Downie, Pladda, Lavinia, Mr Moffat.

Best two Yellow Selfs, two White do., two Dark do.—1. J. Fraser, with Snowdrop, Miss Ramsay, Alex. M'Nab, Dux, Cherub, Ophir.

Silver Teapot, offered by Mr John Downie for the best twelve Blooms. This brought out three crack competitors: after a careful examination, the prize was awarded to H. Adair, Esq., with John Currie, Miss Addison, Dux, Lavinia, Eclat, Princess of Wales, Mrs Moffat, John Beveridge, J. B. Downie, Comus, Masterpiece, Adam Scott.

FANCY PANSIES.

NURSERYMEN.

Best twenty-four dissimilar Blooms—Messrs Downie, Laird, & Laing, with Mrs Dudgeon, Mrs Binden, Mrs Lightbody, George Vair, Princess, Miss Baillie, Mr J. Rivington, Sunrise, Fritz Benary, Miss C. Arbuthnot, Mrs R. Dean, Moca, Gliff, David Thomson, William Bird, Pandora, Amy, La Tulipe, Mrs King, Louisa, Wm. Dean, Miss Melville, Prince Leon, Figaro; 2. Messrs Dickson Co.

GARDENERS AND AMATEURS.

Best twelve dissimilar Blooms, fancy—1. Mr J. Hampton, Newport: in this lot there were fine blooms of John Downie and Mr Hampton; 2. Wm. Old; 3. Mr J. Beveridge.

AMATEURS ONLY.

Twelve best Fancy Blooms—Gold Medal offered by P. W. Syme, Esq., gained by J. Hampton.

LADIES' PRIZE.

Twelve Blooms, Show Pansies—1. Mrs Mill, Kirkettle Cottage.

SIX FANCY PANSY BLOOMS—1. Mr Dunlop, Dalry.

The quantity and quality of the seedlings exhibited was far above the number usually shown in former years, showing the deep interest both gardeners and amateurs are still taking in this pretty little flower. The following were selected the judges for awards, as being distinct from varieties in the various classes.

First-class certificate to Mr Wm. Paul, Paisley, for a self-coloured variety named Mauve Queen.

First-class certificate to Messrs Downie, Laird, & Laing, for a white-ground flower named Beauty.

Certificate of merit to Mr White, Paisley, for a white-ground flower, of good

size, named Ladyburn Rival, apparently very constant from the number of Blooms shown.

First-class certificate to Messrs Dickson & Co., Leith Walk, for a pretty yellow-ground flower named Thomas Carlyle.

First-class certificate to Mr John Fraser, Belmont, for a yellow-ground flower named Mrs Fraser.

First-class certificate to Messrs Downie, Laird, & Laing, for a pretty fancy Pansy named William Baird.

First-class certificate to Messrs Downie, Laird, & Laing, for fancy Pansy named David Thomson, a deep golden yellow of large size, blotched and striped with intense black.

First-class certificate to Mr John Hampton for a curious ultramarine-coloured flower named John Downie; to the same exhibitor was also awarded a first-class certificate for a fancy named Mrs Hampton, of very fine form.

Mr David Thomson, gardener to the Duke of Buccleuch, Drumlanrig Castle, exhibited a large collection of bedding Pansies of intense blue with large dark blotches in the centre; those attracted considerable attention, and the whole was considered so meritorious that the judges awarded Nos. 1 and 2 first-class certificates, and No. 3 a certificate of merit.

A certificate of merit was also awarded to Mr Thomas Nicol, Florist, Morning-side, for a light blue bedding Pansy named Blue King, apparently a very free bloomer.

Messrs Peter Lawson & Son sent a fine collection of new and rare ornamental foliaged plants to decorate the room.

The judges on gardeners' flowers were John Baillie, Esq., Coatbridge; Mr Downie, West Coates Nursery; Mr Tait, Leith Walk Nursery. On nurserymen's and amateurs' flowers—Mr Currie, Parkside; Mr Henderson, Cowden Park; Mr Fraser, Belmont; Mr J. Thomson, Summer Place.

After the Exhibition, about thirty of the members dined together in the Albert Hotel. Mr Mitchell, of Mitchell & Arnott, occupied the chair, Mr D. Syme, of Messrs P. Lawson & Son, acting as croupier.



REVIEWS.

MUSHROOM CULTURE, ITS EXTENSION AND IMPROVEMENT. By William Robinson, F.L.S. Frederick Warne & Co., Covent Garden, London.

At last we have a work on the Mushroom that will come to be regarded as a standard book of reference in relation to its cultivation. Other pamphlets, all very useful in their way, have skimmed the surface of the subject, but in this interesting book the author, who is an intense believer in the value of the Mushroom, covers the whole of the ground, and presents its culture in many aspects, and under varying circumstances. The contents of the book are divided into twelve chapters; those of the greatest practical value are chapters 7, 8, and 9, treating on the culture of the Mushroom in the open ground. We once saw in the south of England very fine Mushrooms being grown in the open air between rows of Cabbages and Potatoes in some newly-broken sandy loam. The ground had been manured with dung from an old bed highly impregnated with spawn, and the warm early summer showers, combined with hot sunny days, brought forth great quantities of Mushrooms of fine quality. To this part of the subject

Mr Robinson gives due prominence, and one certain tendency of the book will be to extend the culture of the Mushroom to localities suited to its outdoor growth. It is written in that sprightly, readable style common to the author's writings; it is profusely and pleasantly illustrated and handsomely got up. The chapters on the modes of cooking the Mushroom, and on some of the edible fungi, are well treated, and not the least valuable. We can best express our opinion of the merits of this book by heartily recommending it to our readers.

JUSTIC ADORNMENTS FOR HOMES OF TASTE. By Shirley Hibberd. A new edition, revised, corrected, and enlarged, with nine coloured plates and two hundred and thirty wood engravings. Groombridge & Sons, Paternoster Row, London.

Some idea of the scope of this charmingly-got-up book may be gathered from a table of contents. In relation to the adornments of the house, it treats of the marine aquarium, fresh-water aquarium, fern case, balcony and window garden, floral ornaments, miniature hot-house, chamber birds, and the aviary. The adornments of the garden embrace the conservatory, fern-house, apiary, pleasure-arden, flower-garden, outdoor fernery, rockery and wilderness, water-scenes, summer-house, and a chapter on miscellaneous garden ornaments. It is, therefore, a record of the incidents of gardening; and the breadth of treatment of the different subjects, combined with its lively style and abundant illustrations, makes it an altogether unique book. As a gift-book it is, perhaps, unsurpassed by any other of a similar character; it is so handsomely bound that it makes an admirable ornament for the drawing-room table; but its great distinguishing charm lies in the fact that it is peculiarly a home book, breathing beneficent influences, and shedding abroad the light of numberless domestic enjoyments—most gentle and refreshing recreations, all or any one of which must greatly aid the dissemination of a healthy home influence. What higher praise can be written concerning it?

THE STUDENT'S FLORA OF THE BRITISH ISLANDS. By J. D. Hooker, M.D., Director of the Royal Gardens, Kew. Macmillan & Co., London.

The object of this book, as stated in the preface, is "to supply students and field-botanists with a fuller account of the plants of the British Islands than the manuals hitherto in use aim at giving." The work is purely technical, but still one of great value to botanical students, while the practical horticulturist will find in it much information of a valuable character. Dr Hooker's high position as a botanist and an accurate man of science is a sufficient guarantee for the character and completeness of such a work as this.

The closing paragraph of the preface contains the promise of another work from the pen of the gifted author, which will be to a great extent a fitting sequel to the volume under notice. "When I commenced this flora," writes Dr Hooker, "it was my intention to have made it a record of those physiological and morphological observations on British plants which have of late given so great an impulse and zest to botanical pursuits, and toward which I was offered much assistance from my friends Mr Darwin, Professor Oliver, and Professor Dickson of Glasgow, and his intention was my chief inducement to undertake the work. I had, however, made but little progress before I discovered that the number of such observations was so great, and that the value, accuracy, and interpretation of many were so disputed, that to make even a small selection from them would be a very difficult task, and would have filled a volume far exceeding the dimensions required for students. I do not abandon the hope of being able at some future time to undertake such a task, in the form of a companion to the 'Student's Flora.'"

THE HORTICULTURAL DIRECTORY FOR 1870. Journal of Horticulture Office, London.

This useful trade guide is still as valuable as ever, and must be of great assistance to nurserymen and others. Additions and corrections are brought down to the latest moment, showing that the work is carefully edited.



BOOKS RECEIVED.

THE GARDENERS' MAGAZINE for June : also, THE FOOD JOURNAL for June



NOTES AND QUERIES.

[Want of space compels us to postpone several valuable communications.—E

ROYAL CALEDONIAN HORTICULTURAL SOCIETY AND THE FORTHCOMING SHOW OF ROSES.—Every lover of the queen of flowers must hail with satisfaction the result arrived at by the Committee of the Royal Caledonian Horticultural Society to give that prominence to the Rose which its merits deserve. The recent papers on the cultivation of the Rose which appeared in the 'Gardener,' from the pen of so skilful a cultivator as S. Reynolds Hole, will no doubt have given and will give, an impetus to Rose-growing in Scotland, which, I trust, will be exemplified by the quantity and superiority of the Roses exhibited at the forthcoming show in Edinburgh. It is not with the view, however, of writing a treatise on the cultivation of the "Queen," or to descant on the probable appearance "she" may make at "her levee" at Edinburgh on the 13th July, but to refer to a custom prevalent in Scotland with Rose exhibitors, and which, I think, is of sufficient importance to merit a moment's attention.

"The competition in Roses to be open to all, whether they be members of the Society or not." So states the Society's schedule, which circumstance is likely to bring out a sprinkling of English exhibitors. Now the custom to which I refer is, surrounding the Rose with Rose-leaves. This is, as I before stated, invariably the practice in Scotland; the same thing practised in England renders the exhibitor subject to disqualification. If one or two judges from England were to judge the Roses at Edinburgh, it would certainly be galling to Scotch exhibitors, who are unaware of the fact I allude to, to find "Disqualified" written on their exhibition card. It is an open question whether or not leaves ought to be added. Some say that a Rose always looks best when surrounded by its own leaves; this I admit, when they are its *own* leaves—that is, leaves attached to the stem, but not counterfeits. We do not exhibit Dahlias, Hollyhocks, Aster Marigolds, &c., with a bunch of leaves surrounding them, and why the Rose? I think something definite should be arrived at by the Committee of the Royal Caledonian Horticultural Society on this point, and so put all on equal footing. I would suggest that the Secretary of the Society intimate to those parties who have given notice of their intention to compete whether such a practice will be admissible.—J. A.

VARIEGATED ZONAL PELARGONIUM LEAVES (I. J.)—The leaves of your seedling Pelargoniums are much inferior to what are now in cultivation, and we doubt they are likely to improve, as, judging from the freshness of the colouring and the texture of the leaves, they appear to be in their best character. T.

'Gardeners' Chronicle' once laid down the properties which ought to guide judges in estimating the qualities of these Pelargoniums in the following rules:—1. The plant must be of vigorous constitution, free-growing, but not long-jointed. 2. The habit must be stout, close, and branching, and the branches thickly furnished with horizontally-set well-displayed leaves. 3. The surface of the leaves must be flat—that is, neither concave nor convex from contraction of the margin. 4. The leaf-colouring must be bright, distinct, and well defined. 5. The ground colour (green) must occupy a space in the centre equal in diameter to the combined zone and marginal belt—that is, half the diameter of the leaf; it must be of uniform hue, and must not extend into or appear beyond the zone. 6. The zone must be either evenly arcuate or regularly scalloped or vandyked, dark on the inner and brightly coloured on the outer edge. 7. The inner portion of the zone to an extent not exceeding one-half its whole breadth must be dark-coloured throughout (blackish or deep brownish red), breaking outwardly in a symmetrically radiated manner into the bright colour (red or pink) of the outer half, which latter must at no point break through the dark belt so as to touch the ground-colour. 8. The marginal belt must be of uniform breadth, and of the same tint throughout (yellow, straw-colour, cream-colour, or white), entirely separated from the ground-colour, or from contact with the darker belt of the zone.

At many country shows, the gold and bronze, or what you term the "bi-color" section, are shown as variegated Pelargoniums; but at the shows of the Royal Horticultural Society they would not be admissible as such. Consult the secretary of your show; he may be able to inform you what was done last year. It would be very wrong to give the prizes to the biggest plants, irrespective of growth and coloration. Medium-sized, well-grown, and nicely-coloured plants stand a much better chance of taking honours. The name of the variety, a leaf of which you enclosed, we take to be Lady Cullum.

VIOLETS.—The little bouquets of Violets which in the spring months are generally sold by the flower-girls in the central streets of London are the produce of many acres of land at Mitcham and its neighbourhood. A short visit to Mr Steedman's Violet farm gives an insight to its workings. There are 16 acres of land under Violet culture. The two varieties of this flower principally grown here are the Russian and the Giant. The first named is darker in colour, the latter is the most fragrant. The picking is done by boys and girls, who have a tin can suspended by a strap over the shoulder on one side, and a bunch of short strips of bass on the other. When twenty-five Violets are plucked, they are tied together with a strip of bass, and placed in the can. Another "hand" is employed to pick leaves only. In about the centre of the little farm there is a shed or barn. Here the picked Violets are brought and placed in heaps, as are also the leaves; but the latter are all thrown into a water-vat and swilled, for the purpose of removing earthy rain-splashes. In the barn from ten to twenty pair of nimble fingers are ready to make up the bouquets as soon as the flowers are supplied; this is done by tying two of the quarter hundred bunches of Violets together with two or three leaves outside them. This done, they are then packed in symmetrical rings in a small basket or skip. About three o'clock P.M. the work is done, and from twenty to eighty skips are put into the van for market. The quantity varies considerably, according to the weather and season.

Mr Steedman is a true philanthropist and trader, and is as well known in Covent Garden at six o'clock in the morning in March and the beginning of April, as Rothschild is on the Exchange at three o'clock in the afternoon. Many a poor flower-girl, without a penny, gets from him fifty bunches of Violets on

credit, and at a price something less than half that the public pay for them retail. The girls frequently increase their profits by dividing every bunch of fifty that they receive into two of twenty-five; but this is done only very early in the year, when the flowers are scarce.

There are large Violet farms in the South of France (that of M. l'Hermine particular), of more than 100 acres, near Nice. Last year the season there was so unfavourable that the Paris market could not be supplied from its customary source. In England, on the contrary, the weather was remarkably mild; and Violets were so abundant at Mitcham that they were forwarded by the night French mail, and sold freely in the Paris morning market.

The Violets are cultivated at Mitcham in single roots, and are not allowed to run together. Nothing deteriorates these flowers more than when they become bedded together. They then grow leaves instead of blossoms. The roots require dividing every other year at least.

THE IMPORTANCE OF MULCHING.—Never before so much as during last summer was I convinced of the beneficial results of mulching. A number of strong plants of Cauliflowers were turned out in April, and, as many will remember, time of severe drought set in, and plants of this description received a great check—in fact, made no growth. Anxious to have my Cauliflowers ready for table as early as possible, mulching was resorted to, and the muck-heap was had in requisition; accordingly, 4 or 5 inches of rotten manure was laid about the plants, and liberal supplies of guano-water given at regular intervals. Suffice it to state, the plants soon made vigorous growth, and ultimately produced fine heads of great size and superb quality, even surpassing some that nature had treated more liberally with a supply of moisture at the right moment.—UP NORTH.

POLYANTHUSES (R. T.)—Polyanthuses may be parted at the end of this month: it would perhaps have been better had they been parted in May. When divided, be sure to plant them deep enough, so that the new fibres, which will come out just beneath the leaves, may at once enter the soil, instead of being exposed to the ravages of slugs, &c. In dry weather these troublesome insects take shelter beneath the foliage of the Polyanthus, and, if not looked after, will not only devour the young roots, but also eat holes in to the stems of the plants. Earthing up and frequent stirrings of the surface in hot weather will destroy numbers and prevent much mischief.

CLEMATIS JOHN GOULD VEITCH (Mrs Watson).—It is a true double-flowering Clematis, and you should obtain it. It is an early-flowering variety, as it has been exhibited in bloom in March and April. It is also hardy, and recommended for planting out of doors. It is a profuse-flowering kind, and the flowers are of a pale bluish mauve colour, and certainly very charming. It is an imported plant, and came direct from Japan.

AGERATUM IMPERIAL DWARF.—This cannot be too highly recommended as a dwarf blue bedding plant. It is a really dwarf Ageratum, growing from 6 to 9 inches; of a capital branching habit and very fine blooming. A gentleman who has put out an edging of over twenty plants, mentioned it to me the other day in flattering terms. Since then I have seen it bedded out, and can bear testimony to the value of his recommendation.—R. R.

NAME OF PLANT.—"A Tourist" writes: "What is the name of the pretty dwarf yellow-flowering plant now blooming so profusely on the banks of the London and North-Western, and other railways?" We should think, *Lotus corniculatus*. Can you send us a specimen?

THE GARDENER.

AUGUST 1870.



HORTICULTURE FOR COTTAGERS.



AVE we recently passed a Horticultural Reform Bill, or, if not, what mean this sudden awakening, on the part of certain great ones, to the knowledge that our cottagers are “horticulturally” ignorant? and this anxious desire to add amongst them the principles of correct gardening by means of a volume of essays that are assumed to contain, for the information of the cottage-gardener, all the knowledge and research that many years of study have enabled the writers to treasure up? It was very kind of those who held out the alluring baits to these earnest scribes thus to try to inculcate into the minds of the poor labourer a little more knowledge relative to gardening, and there was no doubt an equally good intention on the part of the writers themselves; but, after all their labours and all their good intentions, not one-hundredth part of the cottagers will read one-tenth part of what has been written; and more than one-tenth of those *who read* will comprehend, much less practise, what has been so learnedly and so laboriously composed for their special behoof. There are two things about cottagers that seem to have escaped the attention of their would-be patrons—1st, They take but little interest in garden literature (the horticultural column of a penny weekly paper being their chief reading); 2d, They are, as a rule, much better versed in practical cottage-gardening than have hitherto been supposed to be. That these two assertions have the support of nearly all who are thoroughly conversant with cottage-gardeners I feel assured; and they will also admit that the poorer classes are really good vegetable cultivators, their success in this respect being usually more often limited by the means at their

disposal than by any lack of cultural knowledge. It is very rarely that the vegetables cultivated by the cottager exceed in number some seven or eight kinds—his stock-crops being Potatoes, Runner and Broad Beans, Cabbages, Turnips, Onions, Parsnips, and Vegetable Marrows, with probably just a few Lettuces and Radishes for salad in the hot weather. Peas are rather too expensive, and cover too much ground; indeed, in most cases they are looked upon rather as a luxury than as a necessary vegetable. Granting, as I do most readily, that in the matter of sorts grown there may be some improvement, yet in regard to his actual wants he is the best judge; and he invariably grows the crops upon which his mind is set, with so much of care and judgment as to frequently put professional gardeners to shame. The cottager knows as well as any one the use of a good spade or fork, and the value of deep digging; he also knows the value of manure and its application. Herein he is quite practical in two of the most important elements of vegetable culture, although, at the same time, the most simple ones. Not a little, however, in the cottage-garden, depends upon the worker's tastes. Of course, some men are more thoroughly imbued with gardening fancies than others, but it may be taken as a rule that a love of gardening is inherent in the breasts of all of us; and especially is this sentiment strong amongst the poor, who will earnestly strive to obtain a piece of allotment ground if they have no garden attached to their dwelling, and think it no hardship to walk long distances, after a day's hard labour has been performed, to gratify their natural taste for gardening operations; and secure some profit for their labour. I have stated that the cottager takes but little interest in garden literature, and the cause of this indifference is to be found less in his comparative literary ignorance than in the fact that the horticultural serial literature of the present day has for him no features of interest, or adaptability to his capacities and requirements. It is not to be expected that matter purely professional in character can offer to the cottager much that is enticing. For him a special literature is necessary—a literature that shall awaken his interest, fall in with his notions, adapt itself to his capacities, and finally become the horticultural organ of the poorer classes. Then in regard to their practical knowledge, which, though possibly in some respects crude, is yet far from being small in amount, as is generally imagined,—it is obvious, to all familiar with them, that more improvement is to be made in this respect by the force of example than by mere precept or reading. Clergymen or gentlemen who have a special desire to extend a knowledge of horticulture amongst those by whom they are surrounded, will find their most useful assistant-teacher to be their own well-cultivated garden, into which they should invite their poorer neighbours to inspect it;

and if to this lesson they can add that of a thorough practical knowledge themselves, they will find that progress and improvement in the cottage-gardens about them will be made just in proportion as they put these powerful instructive influences into operation. In the 'Gardener's Annual' for 1863, an unique little volume, edited by the Rev. S. Reynolds Hole, is to be found a most admirably-written chapter on cottage-gardening, that is ten times more worthy of circulation amongst rich and poor alike than are the heavy, cumbrous, and dry details of even the prize essay spoken of in your last number. Here a little story is told of how, by example and precept, a persevering clergyman succeeded in reforming the morals and quickening the horticultural life of the poor of his parish, not by the prescribed formulas of church and school, but through the power of that love of beauty and order dwelling so strongly within himself. I give one short extract:—"I am sure that ours would be a happier world if we had more such assemblies of rich and poor [the cottagers' show], if we would allow ourselves to be convinced that our neighbours (our neighbours are those who live nearest to us) bring, like all other duties, the surest and purest recompense, if the members of a parish would try to act, as the members of a family, more in unison; and if, making our friendships where we see more of our friends, and weighing men's merits rather than their spoons, we would enjoy the Primroses and Violets under our feet, instead of breaking our hearts about a blue Dahlia." How many of our provincial clergy or gentry are willing to emulate the example this little story sets forth, and thus, by the power of horticultural teaching, strive to aid the material welfare of their neighbours? Especially can they prove useful in getting for distribution amongst them vegetable and flower seeds of an improved character, newer and more prolific varieties of Potatoes, cheap and useful fruit-trees, and furnishing them with advice and help in a hundred ways, without trespassing over those bounds of charity that are at all times so dangerous to cross when dealing with the working-classes.

The gratuitous advice, freely given to cottagers of late, about the best sorts of fruit-trees for their gardens, should rather be addressed to landowners and others who are constituted the cottage landlords. How many of this class of persons are there who make the provisioning of their cottage-gardens with a proper supply of fruit-trees a matter of grave interest or even of inquiry? Yet that it is a part of their duty as owners there can be no doubt, as fruit-trees are not the creatures of a day, but for many succeeding years. Is it wise or just to expect that cottagers, whose tenancy of their gardens is limited by uncertainty, and whose means are equally so, will expend money upon the purchase of trees that can only yield

a moderate crop at least in some five or six years afterwards? A ~~d~~vice as to the best sorts to grow may be all very well, but ~~th~~at the advice thus tendered will be practised by those to whom it is addressed is beyond the range of probabilities; it may be within the reach of one or two to accomplish it, but to the great mass of poor men it will prove superfluous. Perhaps some day the few who hold the millions of broad acres of which Great Britain consists may awake to the conviction that their vast possessions may be improved, and the lives of their poorer tenants made more tolerable, by the addition of a nursery to their estates, from which every garden, great and small, may have a full and constant supply of all useful kinds of productive fruit-trees *free of charge*, and shall place all these gardens under such a degree of horticultural control that none shall be lacking in any important respect. Such a proposal as this carried out would be the means of almost working a revolution in cottage homes, and be made useful in adding largely to the means of subsistence of the rural poor. We have never too much fruit. Very abundant seasons are in this unpropitious clime "few and far between;" and, owing to the comparatively small quantity of the better sorts of fruit that are grown, such kinds are rarely within the reach of the poor.

Many a writer, and oft, has painted the delightful spectacle of seeing all our cottages covered with the fruit of the Peach, Nectarine, Pear, Apricot, and the Grape. What has been done practically to realise this conception? Comparatively nothing. Let the trees be supplied by landowners free, and be subjected to a certain amount of professional supervision, and then we may be found in a fair way to realise the ideal picture.

In good sooth, writers may write and printers may print whole heaps of book-lore for the special edification of these same cottagers, but the real work must be done by those whose position in life is such as to give force to their precept and power to their example. There are few greater aids to the promotion of improved cottage-gardening than in the establishment of cottagers' shows, either once or twice in the year; but the promoters must not fall into the mistake of supposing that to establish the show is all they have to do. The gathering together of produce of the year's labours may be, and is, a sight of great interest; but that interest, and the advantage of the spectacle, can only be measured by the patient working and teaching that has been afforded by those who wish to see real improvement and success. The kindly word, the right advice, the apt cultural hints, the showing how to do where mere precept fails,—this is the seed to sow, of which the show is the fruit and realisation.

To this part of the subject, however, I will revert anon. That our cottagers already know much, I believe; that they are willing to be taught more, I feel assured; their teaching must not be pedantic, but rather a labour of pleasure and of love.

A COTTAGE GARDENER.



NOTES OF THE MONTH.

THE reputed trial of Lawn-Mowers which took place at Leeds, on the occasion of the Horticultural and Floral Show on the 3d of June last, appears to have been of a character to call for a protest from the friends of fair-play. The trial, so called, was between the American machine known as the Archimedean, and certain machines constructed by Messrs Thomas Green & Sons, the well-known manufacturers, of Leeds. The result of this trial has been put before the public in a somewhat pretentious manner, just as if it had been one of the duly advertised incidents of the flower-show. There does not appear, however, to have been any public intimation previously made that such a trial would take place; the English agents of the American machine were not only not requested to send a machine to Leeds to compete with the others, but absolutely knew nothing of the trial till they saw the result advertised. Who supplied the Archimedean Mower tested on this occasion does not appear; whether it was in a fit condition to be justly tested, does not transpire. The verdict of the judges—"the judges were the gentlemen who made the awards at the flower-show"—was as conclusive as it was significant. This document is so curious, and withal so instructive, as to be well worth reproducing:—

"We, the judges of the Leeds Horticultural and Floral Society, having tested lawn-mowing machines manufactured by Messrs Thomas Green & Son against the one called the 'Archimedean' in an open field where the bents were from 5 to 8 inches long, have come to the unanimous conclusion that the 'Archimedean' is perfectly useless either for long or short grass, the superiority of Green's machines having proved on this, as on many other occasions, pre-eminent. We find the 'Archimedean' is only suitable for banks and steep rising-grounds."

The names of the judges who passed this verdict are those of men, some of them at least, in whose judgment reliance might reasonably be placed, did not the terms of the verdict itself interfere, and make one pause with grave doubts as it was read. There is something about it suggestive of a desire to reach a foregone conclusion—a not very difficult matter under the circumstances—as each judge seems to have been aware that "on many other occasions" Green's machines had

proved pre-eminent. The transition from the belief of this pre-eminence in the past to a ready belief of it in the present, was a natural, easy, and graceful process. But the emphatic thoroughness of the verdict makes one even more suspicious of its veracity and sceptical as to its value. The Archimedean Mower was designated as "perfectly useless, either for long or short grass." To quarrel even with such a verdict as this, much less to attempt to refute that which carries its own refutation with it, were a mere waste of time. As sympathisers with the old British love for fair-play, we have referred to this trial; and we join our protest with those of some who were present, against such a burlesque on justice as this appears to have been.

The Sexual Conditions of Plants is a theme which has been engaging the attention of botanists for some time past. In the 'Journal of Botany' Mr Worthington Smith recently contributed some interesting observations of a curious character. Across the Atlantic the American botanists appear to be pursuing the same line of study, with equally interesting and valuable results. In a recent number of the 'Proceedings of the Academy of Natural Sciences of Philadelphia,' Mr Meehan continues to detail some suggestive researches, and gives the following observations on the cross fertilisation and the law of sex in *Euphorbia*. Mr. Meehan states:—

"The list of plants which seem to avoid self-fertilisation is already very large. I think *Euphorbia* may be added to the number. Certainly this is the case with *Euphorbia fulgens*, Karw. (*E. jacquiniæflora*, Hook.), which I have watched very closely in my greenhouse this winter. Several days before the stamens burst through the involucre which closely invests them, the pistil with its ovary on the long pedicle has protruded itself beyond, exposed its stigmatic surface, and received the pollen from the neighbouring flowers. The way in which the pollen scatters itself is curious. In most flowers a slight jar or a breath of wind will waft the pollen to the stigmas, but I have not been able to notice any to leave the flowers in this way; for as soon as the anther cells burst, the whole stamen falls from its filament-like pedicle, and either drops at once on the pistils of other flowers, or scatters its pollen grains by the force of the fall.

"This *Euphorbia* also furnishes another contribution to the theory of sex which I have advanced. The plan on which the male and female organs are formed is evidently a common one; and the only reason why some flower-heads have a pistil in the centre, and others are wholly staminate, is, that there is greater axial vigour when the female flower is formed. Whenever the common peduncle (below the scarlet involucre) is weak, a pistil never appears in that head of flowers. A few which seem strong never have them, but the great majority of the strong peduncles are those which bear the female blossoms. Another interesting fact is, that the number of male flowers is less in those heads which also bear a female than in those which are wholly staminate. This seems to add to the point I made in my paper on *Ambrosia*, that after the flowers have been partially formed in embryo, and before the sex has been finally determined, the female flower, being primordially the stronger, has the power of absorbing the males of their partially-formed elements into its system. It is certainly remark-

ble that in both these instances the number of male flowers should decrease in proportion to the existence or vigour of the central female one.

"The male and female flowers of *Euphorbia fulgens* are formed much alike. The female occupies the centre, and seems really but a prolongation of the main stem, on the top of which is an articulation from which the ovarium springs. The capsule readily falls from this articulation when mature. From the base of the female central peduncle spring weaker peduncles, colourless, appearing indeed almost like filaments, articulated at about the same height as the female, only above the point bearing a short filament and anther—the caducous part before referred to. No one can fail to see the correspondence of plan in these different parts, and I think that nothing but the favourable position in the direction of axial vigour made the central flower a female one.

"Cases occasionally occur in which a tolerably strong head of wholly male flowers will develop the central axis into a peduncle almost as long and vigorous as those which bear female flowers. But the flow of vital force—if I am correct in using this term—not being quite sufficient, the final goal of natural perfection in the female form was not reached. These cases do not occur often, but are well worth looking for, as they show so clearly the dividing line between the forces which govern the male and the female sex."

The practice of stealing plants and cuttings at flower-shows appears at present now to be getting most inconveniently and alarmingly common. Only recently several cases have occurred of slips being torn from new plants when on the exhibition-table. Bad as is the practice we have seen in operation in Ireland, of the public sweeping from the tables whatever they could lay their hands on of cut flowers (not being altogether disregarding of fruit) as the hour for closing the exhibition came round, this practice of stealing cuttings and branches is much worse, as it will operate to deter many from showing new plants of value. London and the provinces form no exception to this. How it is to be remedied is well worth consideration. Happily the act is of rare occurrence, at least in so far as such acts are made public.

The annual festival of the Gardeners' Royal Benevolent Institution, being also the twenty-seventh anniversary of its celebration, was held at the London Tavern, Bishopsgate Street, on the 29th of June, the Earl of Derby, one of the vice-presidents, presiding, and among the company was the Nawab Nizam of Bengal, in gorgeous apparel, resplendent with diamonds and precious stones. From statements made by the chairman on proposing the toast of the evening, it appeared that since its formation the Society has expended upwards of £15,000 in giving relief in accordance with the conditions laid down in its rules; that at the present time there were fifty-four pensioners enjoying the bounty of the Institution, which number, by a recent election, has been augmented to sixty; and that it has invested in the public funds the sum of nearly £8000. While the position of the Society had been one of steady and unvaried prosperity, the comparative smallness of the list of subscribers was much to be deplored, and the chairman hinted that,

with a better organisation, the operations of the Society might be extended over a much wider range. The principle on which the Institution was organised was stated to be one partly of charity and partly of insurance. With great tact the noble chairman defended the rule that preference should be given, in distributing pensions, to those who had during fifteen years contributed to the funds of the Institution. This he justified on the ground that, in point of fact, those whom they were assisting were merely receiving back that which they had subscribed in the days of their prosperity. The eloquent and earnest appeal made by the noble lord resulted in a subscription-list larger than had ever before been realised on a like occasion. As usual, the room was handsomely decorated with plants and flowers kindly furnished by the leading nurserymen, and handsome contributions of fruit were sent towards the dessert.



THE THEORY OF THE LEAF.

ALL plants are produced from seeds or buds—the one free, the other attached; the one spreading the plant geographically, the other increasing its individual size. Carefully examined, the seed, or starting-point in the life of a plant, is composed of a leaf rolled tight, and altered in tissue and contents so as to suit its new requirements. Look at the germination of a Bean: the two leaves of which it is composed appear in the fleshy lobes or cotyledons which first rise above the ground, and afford nourishment to the embryo. The bud, which is physiologically co-ordinate with the seed, is found to consist of leaves folded in a peculiar manner, and covered with tough leathery scales to protect them from the winter's cold; and in spring it evolves the stem, leaves, and fruit. By some the stem is regarded as an essentially distinct and typical part, but the study of plants in which it departs from the normal form will clearly indicate its foliaceous origin. The leaf is here made to assume a columnar shape, strengthened at the joints and nodes for the support of the superstructure, and elevated above the ground in order to expose all the organs which it bears to the quickening influence of sun and air. In plants which are destitute of ordinary leaves, or which shed them at an early period, and remain ever after naked, the stems serve all the purposes of leaves. In the Cactus tribe, the whole plant consists of pointed leaves, and in the common Butcher's Broom of our own country, the stem becomes foliaceous—that is, flattened and leaf-like. Stems produce buds and flowers, so do leaves—as, for instance, those

the Bryophyllum. Indeed, every leaf is a modified branch, and toothed or serrated edges correspond with the nodes of the

Further, all the appendages borne on the stem—such as scales, bracts, flowers, and fruit—are modifications of this one common type. Flowers, the glory of the vegetable world, are merely arranged so as to protect the vital organs within them, and so as to attract insects to scatter the fertilising pollen, and so as to reflect and absorb the light and heat of the sun for ripening the fruit. Stamens and pistils may be converted, by the skill of the florist, into petals, and the blossoms so produced are called double flowers, and are necessarily barren. The Wild Rose has only a single corolla. Cultivated in rich soil, its yellow stamens are changed into the blush leaves of the full-blown Cabbage-Rose. There is a monstrosity to which the Garden Rose is liable—the stamens and pistils are converted into green leaves, and the plant begins to develop stem and foliage from the bosom of the petals, just as though the blossom were not the culminating point, but merely a stage in its growth. We see a whole gradual process in the metamorphosis of the common leaf into all the floral organs most beautifully displayed in the normal flower of the common Water-Lily—the outermost circle of petals is greenish, approaching the herbaceous texture and colour of the calyx; the next circles are purer and more succulent; and the innermost ones are snowy white, entirely cellular, and, strange to say, begin to show rudiments of an anther at their points. Gradually the petals become smaller and narrower, while the anthers on their summits become more distinct, until at length the usual thread-like filaments and golden dusty anthers of perfect stamens appear in the heart of the flower.

We come next to the fruit, which, in all its astonishing varieties of texture, colour, and shape, is also a *modified leaf*; and it is one of the most interesting studies in natural history to trace the correspondence between the different parts of structures so greatly altered and the original type. In the Peach, for instance, the stone is the upper skin—a leaf hardened so as to protect the kernel or seed; the pulp is the cellular tissue of a leaf expanded and endowed with nutritive properties for the sustenance of the embryo plant; and the beautiful downy skin on the outside is the lower cuticle of the leaf, with its sun-bloom upon it, the hollow line on one side of the fruit marking the union between the two edges of the leaf. So also in the Apple—the parchment-like cover is the upper surface of the fruit, and the flesh is the cellular tissue greatly swollen. In the Orange, the juicy lips enclosing the seeds are the different sections

of the leaf developed in an extraordinary manner; while through the transparent skin of the ripe Gooseberry we see the ramification of the *leaf-veins*, conclusively proving its origin. In all the parts and organs of the plant, then, from the seed to the fruit, we have found that the leaf is the type and pattern after which they have been constructed, and those modifications of structure, colour, and composition which they exhibit are for special purposes in the economy of the plant in the first place, also for services to the animal creation, and even to man himself, to whom the sweetness of the fruit and the beauty of the flowers must have had reference in the gracious intention of Him who created them both.

D. HUGH MACMILLAN.



THE LARGE FLOWERING OR SHOW PELARGONIUMS.

A LOOK through the collections of Show Pelargoniums when in bloom in the month of June gave the following as a selection of twenty-four fine varieties of great usefulness, whether for the decoration of the conservatory, or for the exhibition-table. A few of them are new flowers, most of them are varieties of the past three or four years, and all have been selected for their obvious good qualities. Alphabetically, our selection runs in the following order: Attraction (Foster), soft rosy lilac, novel and good; Bonnie Charlie (Hoyle), rosy crimson, with black top petals; Charles Turner (Hoyle), orange scarlet, rich dark upper petals, a grand flower of extra-fine quality; Claribel (Hoyle), a charming light variety, pure white, with a bright carmine spot on the top petals; Corsair (Foster), bright purple, with black top petals, a novel and fine flower; Conflagration (Foster), rich crimson, with black blotch on top petals; Diadem (Hoyle), rosy purple, with deep shading, rich dark top petals; Emily (Hoyle), delicate rose, large and fine; Empress (Foster), rose, with maroon spot on the top petals; Envoy (Hoyle), warm rose, with shaded dark top petals; Example (Hoyle), a grand flower, rich deep crimson rose, black top petals; Heirloom (Hoyle), rich orange rose, with large black blotch on top petals; Hermit (Beck), white, with large reddish maroon spot on top petals; Lady of the Lake (Foster), orange rose, very dark maroon top petals, a fine but rather late-blooming variety; Lilacina (Beck), a pleasing pale lilac-coloured flower, not of the best form, but charming for its hue of colour; Maid of Honour (Foster), light rosy pink, with small dark blotch on top petals; Marion (Foster), a noble flower, rose, with

dark maroon top petals; Mary Hoyle (Hoyle), a beautiful flower, warm orange rose, small dark blotch on top petals lit up with bright orange; Queen of Roses (Beck), lively purple, shaded with rose, new colour, very attractive and free; Regina Formosa (Beck), rose, dark top petals; Royal Albert (Hoyle), warm rose lower petals, large dark blotch on top petals, a large and very fine flower; Sœur de Charité (Foster), rich painted orange lower petals, black top petals, a fine and striking flower; Sunbeam (Hoyle), rose lower petals, dark top petals, remarkably free blooming; Troubadour (Foster), lively orange pink, dark spot on upper petals, a fine and striking flower; and William Hoyle (Hoyle), a very dark variety, warm rose lower petals, tinted with orange and red, very fine, and novel in character.

Let us suppose that an order is given to a nurseryman for a dozen of these Pelargoniums for exhibition purposes. The best time to receive the plants would be in October. They should then be in 8-pots. As soon as received the plants should be gently syringed to clean them, the surface soil slightly stirred, and then placed in a light and airy position to recover the effects of the journey from the nursery. The plants should be well established, and if in vigorous growth will soon require a shift into the next-sized pot, using good yellow loam, enriched with some well-decomposed stable manure and the addition of some silver sand. Each plant should have the aid of a neat stake and air and light, and attention should be paid to watering; and in a month's time the plants will be ready for a farther shift into a larger pot, in which they may remain until the end of January or beginning of February, when they should be placed in their blooming-pots, using them of a size suited to the strength of each plant. It is highly important for the cultivator to bear in mind that, as it is necessary the pots be well filled with roots by the time the plants come into bloom, they should not be overpotted, or they will make rank growth at the expense of flower. As soon as the lower leaves show symptoms of turning yellow during the spring, a little stimulus will be requisite, and some clear weak manure water may be given with benefit, and be continued until the buds are nearly ready to expand. Anything like forcing should be avoided, but a little fire-heat will be beneficial in damp, dull, and foggy weather, and also whenever the temperature sinks to near 40°.

Cleanliness is a very important element in the culture of the Pelargonium. No dead foliage should be allowed to remain on the plants, and if the green leaves become dirty or dusty, they should be carefully washed. Lay it down as a general rule that health and cleanliness must be sedulously attended to, airing well even in winter, but avoiding cold draughts of air, and keeping the plants free from damp. No

flower is more easily cultivated than the *Pelargonium*, probably none more generally mismanaged.

At the blooming time some shade should be given to the flower during bright, hot, sunny weather, to prolong the bloom, and prevent it from being scorched. Immediately after blooming, the plants should be placed out of doors on a spot not exposed to heavy rains, and water be sparingly given, so that the wood can become well ripened; for hard well-ripened wood is of the utmost value. After cutting down the plants, leaving a "bottom" corresponding to the size of the plant, they should be placed in a greenhouse or frame by themselves, and kept dry, and exposed to the sun and air, and protected from rain only. In about a month the buds will have pushed sufficiently to intimate that the plants should be repotted; they should then be shaken out of the pots, the whole of the soil removed, and the roots pruned, and be potted in small pots, kept in a close shaded frame for a few days, and gradually inured to the light, when more air may be given. In October, a shift should be made into the blooming-pots, an operation requiring some care, that the growing shoots be not rubbed off. Water but sparingly, and avoid wetting the foliage during the winter months. When the growing season sets in, water thoroughly as the plants require it.

As specimens for exhibition require some management differing from that required for those plants intended for the decoration of the conservatory, some hints on this matter may not be unacceptable. In growing *Pelargoniums* for exhibition, experience is of the utmost value, while forethought is scarcely less important. Supposing a good head of blooms is required in May, there must be a judicious selection of plants for early work, and these should have their last shifts not later than the beginning of October, and by January the pots should be tolerably full of roots, and the plants have made strong growth. At this stage they require some encouragement, by putting on a little fire early in the afternoon, just sufficient to raise the temperature of the house; when warm, the flues or pipes can be syringed if the weather be open and fine. The steam rising from the pipes excites the plants to make growth, and as the season advances the plants should be encouraged to increase this. The shoots should be tied out singly, so as to admit light and air to every part of the plant. As the season advances, water should be more freely given, but care must be taken not to make the soil too wet, so as to induce a weak sappy growth; air should be given on all favourable occasions, but cold draughts of air should not be allowed to play directly on the plants. Plants intended for exhibition in June, July, and August, should not be excited into growth so early as those intended for early

ing; they should, however, receive their final shifts by the end of year, and be gently grown, and heat should be given only on al occasions—as for instance, to exclude frost and dry the house, g air at the same time. Early in January there should be the nencement of tying the plants into shape, as the old wood as well e young can at this stage be twisted with less danger than later e season, when it is full of sap. As before stated, care must be not to water the plants too freely, as it is not quick growth that quired so much as short strong shoots, which will insure fine rs as well as a good head of bloom.

e later in the year the plants are required for exhibition purposes, more valuable does experience become, and the greater necessity re for the due exercise of forethought. There is no more valu- teacher than experience; perhaps there is scarcely a preceptor e lessons are more disregarded by some—certainly not by success- xhibitors of the Show Pelargonium.



THE CULTIVATION OF HARDY FRUITS.

THE APRICOT.

(Continued from page 303.)

Apricot, as has already been hinted, starts into activity at the st approach of spring, and, as a consequence of this, produces its 1 at a time when we often suffer much from sharp frosts in the ing. It is therefore of the greatest importance to use some arti- means whereby to guard against the evil consequences which l result from exposure to even two or three degrees of frost. us plans have been adopted at different times by cultivators, but est, to my mind, is that practised at Floors Castle by Mr Rose, of Frogmore. The Apricot-wall there has a western aspect, so he reader will observe it is not placed in what, for Scotland, is ally considered the best position—viz., the southern; yet, from al years' observation, I can state that wall never failed to pro- a crop of first-rate fruit. The plan adopted was as follows:— 1 the buds began to swell, poles were obtained reaching to the : the wall under the cope, while their bottoms rested upon the r 3 feet or thereby from the base of the wall—the tops so secured it there was no chance of being blown over by wind: this having accomplished, woollen netting—one net of which is as good as f the ordinary kind used for this purpose—was fastened to the and allowed to hang loosely down over the poles. Small blocks

were placed at equal distances along the wall, and tackle adjusted thereto, by which means the netting could be drawn up and down at pleasure. Whenever a frosty night threatened or cold winds prevailed, these nets were run down ; but during the day, when the weather was fine, they were invariably drawn up. A broad temporary wooden coping has been recommended and extensively used by some of our leading horticulturists. The breadth used is from 9 inches to 1 foot, and it has often proved very serviceable for the purpose intended. Yet we cannot shut our eyes to the fact that if a sharp wind were blowing with the frost, the chances are that not more than 2 or 3 feet of the upper surface of the wall would be saved even with 1 foot of coping. Others, again, use Spruce branches or Fern branches, which are hung regularly all over the surface of the trees ; and from the labour necessary to place them there, it will be obvious that they must be permanent until their work is accomplished. This I consider the worst of all protections, and would scarcely recommend it unless no other could be obtained. Among the many arguments which might be brought against this mode is the very obvious one, that while the trees are protected from the severity of wind and frost, they are also denied the benefits to be derived from the genial influences of the sun and light. The young fruit, as it begins to form, assumes a pale sickly appearance, very different from the bright healthy green look natural to the Apricot ; while the shoots and leaves become weakly and "drawn." Such wholesale covering cannot, therefore, be good ; for although, under this system, young vigorous trees may produce good crops of fair fruit, yet I doubt not, if other and more natural means were adopted, a good crop of better fruit would be the result. Trees protected by the methods just alluded to cannot be expected to be so hardy as to allow the total removal of their covering at one time, yet from the nature of such coverings it is impossible to do otherwise ; and the consequence is, they will often suffer as much, after its removal, from the effects of 4 or 5 degrees of frost, as they might have suffered had they been entirely left to the mercy of the weather without any protection whatever, or even more. The method of protection which I have recommended as the best for this period, will also be found to be the best for protecting the fruit from the ravages of wasps and suchlike when the fruit is ripening, unless where hexagon netting is used. While wool-netting, which is generally about 1 inch in the mesh, will keep out birds, it will at the same time prevent wasps, which are great devourers of the Apricot, from entering, as they dislike wool so much that they will not alight upon it, and without alighting upon it they will not attempt to pass through.

As soon as the Apricots have set, and are about the size of a large Pea, the fruit should be thinned out to about half the distance that it

intended to bear the crop. In the smaller-growing varieties, 4 to 6 ches, and in the larger kinds 9 or 10 inches, will be found to be a good distance for the crop. To the half of these distances let them at this stage be thinned, and when thoroughly stoned the superfluous fruit may be removed.

The principal diseases with which the Apricot is attacked in this country are gum, canker, mildew, and that mysterious dying-off of the branches, and sometimes whole limbs, during the growing season. The exudation of gum is generally, though not perhaps always, the result of some external injury. Undue twisting or bending of branches, to the breaking of the bark or injury of the cellular tissue, is in every case followed at an earlier or later date, according to the extent of the damage, by an exudation of gum. Sometimes, at the nailing season, by a slip of the hand of the operator, the hammer may fall upon a branch and injure the bark; this also is the precursor of this disease. There is no known remedy for it, so that every care and precaution ought to be exercised to avoid the slightest injury to the tree which might lead to this result. Canker in the case of the Apricot, as in everything else, is the result of the tree being planted in an uncongenial soil, or when the roots penetrate down into a bad subsoil. Whenever the first symptoms of it appear, means ought to be adopted to prevent its further progress, and to re-establish the constitution of the tree. To accomplish this, the tree ought to be well root-pruned, having all rank and watery roots removed; after which a good supply of fresh soil ought, if possible, to be procured, into which the tree may be planted: this will for time, at all events, stop the further progress of the disease. "Mildew appears," Mr Knight has stated (see 'Horticultural Transactions,' vol. i. p. 86) "to be the want of a sufficient supply of moisture from the soil, with the excess of humidity in the air, particularly when the plants be exposed to a temperature below that to which they have been accustomed." This appears to be a fair statement of the case; and so far as my own experience has gone, it was only under such circumstances that I have seen mildew attack the Apricot. The best remedy is an application of sulphur upon the first appearance of an attack. The cause of the dying-off of portions of a tree at the growing period is involved in considerable mystery. Various are the reasons given by many of our best horticulturists regarding the matter; but most of these opinions are mere speculations, and are only given as such. Some have said that it is the result of sunstroke, others that it is through injury sustained by the sap-vessels through the agency of frost. I am rather sceptical regarding either of these being the cause, as I have noticed that branches

which die in this manner often show a weakness for a year or two previous to their death; while if sunstroke were the cause, death would follow in a very much shorter time. On the other hand, I have noticed that branches die in this fashion as often after a very mild winter as after a very severe one; therefore I hardly think frost can be the cause of it. If I may be allowed to speculate regarding the matter, my theory is that it is the result of the branch becoming bark-bound. This will account for the branch showing signs of failing health for a year or so previous to its death. By slow degrees the bark gets tighter, and the wood, in attempting to swell, failing to find space to grow externally, presses upon the fluid-tubes in such a manner as in the course of time to almost close them up. Having arrived at this stage, the branch pushes its buds into leaf, and all goes well for a time; but whenever a day of strong sun or of parching wind comes, the fluid-tubes become unable to supply the necessary amount of food for the growing appetite of the quickly-developing leaves, and the result is that all at once the branch flags and dies off. I may be wrong in this speculation regarding the matter, but it may be cleared up in the course of time. Let a few gardeners in various parts of the kingdom, whenever they see the least appearance of the disease, run their knives longitudinally up the branch so affected from the main stem for some considerable distance, and in three or four places round the branch, and if the cause is to be attributed to *bark-binding*, the above will prove to some extent a cure. I have not adopted this theory long enough to be able to prove the matter, but hope in time to do so. If those who may try the experiment would have the goodness to report their results of it in the pages of the 'Gardener,' I have no doubt the Editors would give it a place for the benefit of their many readers.

There are various insect enemies to the Apricot cultivator; the first of these is the *Curculio tenebricosus*, which is a small and very destructive beetle. It secretes itself under the loose bark, and in crevices and old nail-holes in the wall. The best cure is to have the walls freshly painted with lime, and the loose bark removed from the trunk and branches of the trees. In winter let the trees so affected be thoroughly syringed with a strong decoction of tobacco, and in most cases it will prove effectual.

The *Tortrix Woeberiana*, although not a very common enemy, is, however, a very injurious one, as its depredations upon the branches in many cases result in the exudation of gum. The larva is of a greenish colour, with a red head. Its presence is indicated by accumulations of reddish-brown heaps upon the branches. Under these heaps will be

ound a small tunnel, in which the larva is lying and feeding upon the inner bark of the tree. Two generations are yearly produced, the one in May, the other in August. The best means to destroy them is to thrust a needle down through their abodes, whereby they will instantly be destroyed. Mr M'Intosh recommends painting the branches so infected by a solution of lime on the first appearance of the enemy.

The *Ditula angustiorana* is a greenish caterpillar, which, feeding upon the leaves, does considerable damage. It makes its appearance in May, and forms itself a home by binding together the extremities of the leaves, which, as they continue to grow, become curled. In the course of a short time it changes into a chrysalis, from which emerges the perfect moth in the month of July. The best means to destroy these is by hand-picking, which ought to be repeatedly and carefully done during the early part of the summer. JAMES M'MILLAN.

(To be continued.)



NOTES ON NEW, RARE, AND CHOICE HARDY HERBACEOUS PLANTS.

THE attention now being given to those plants, a pledge of their rising popularity, induces me to forward you the following notes of a few thoroughly good things, which, though not new save in a few instances, are yet comparatively little known and seldom met with.

Aquilegia cærulea is a beautiful plant from the Rocky Mountains, which is not sufficiently known. It is remarkably showy, and distinct in character from any other species, and produces in a somewhat free manner large erect flowers of a beautiful violet-blue hue, delicately suffused with white towards the mouth. A little protection during winter, though not absolutely necessary, should be given to this fine species, for the sake of safety.

Arabis purpurea or *rosea*.—This is a new and distinct species, of recent introduction, from the mountainous districts of Asia Minor, closely resembling the well-known *Arabis albida*, and blooming about the same time. Its flowers are produced in great abundance, and are of a pale rose-colour; it is very attractive, and is certainly a valuable acquisition for the spring garden. Mr William Ingram, of Belvoir, whose spring gardening can compare with anything like it in Great Britain, has used this *Arabis* this season, and speaks of it in the highest terms of praise.

Armeria Alpina grandiflora.—This is a beautiful large-flowering variety of *A. Alpina*, which, from its immense distribution, will soon become a familiar plant. It is of very free growth, resembling the

common Thrift, but much larger both in foliage and flowers, and continues in bloom for seven or eight months out of the twelve. Some two years ago it was highly spoken of by several writers in the 'Gardener's Chronicle,' certainly in no higher terms than it deserves. The variety will be found very useful in furnishing a stand of cut flowers of hardy perennials and herbaceous plants.

Delphinium Bella Donna.—This, though not a new plant, is one deserving the highest recommendation. It is of very free growth, and an abundant bloomer; and whether planted singly or in a mass, is one of the most effective plants in cultivation. The colour is sky-blue, and it forms an excellent contrast to the deeper-coloured kinds.

Funkia grandiflora.—This is a beautiful plant, possessing every property that can well be desired, and by many competent judges it has been pronounced one of the finest plants that can be grown for the decoration of the garden; and it is also very useful for conservatory work. It has been represented that it will not flower out of doors; but this is erroneous, as many can testify. Mr T. S. Ware, of Tottenham, states that he has grown it for several years, and it has hitherto bloomed very freely in his specimen border, although its large delicate foliage is apt to get injured by change of weather. If grown in pots, this evil can be avoided, and the result will amply repay any one for the trouble involved by so cultivating it. Its pure white flowers, handsome foliage, and powerful fragrance, entitle it to a place in every collection.

Gentiana gelida.—This is a charming hardy perennial from the plains of Siberia, and will grow freely in any ordinary soil, and form large spreading tufts of rich blue flowers about 12 inches in height, with from four to eight flowers on each tuft. A fine example of this could have been seen a few weeks ago on Mr Barron's herbaceous border at the Chiswick Gardens. When I saw it, it was in full bloom, and, for aught I know to the contrary, it may be equally attractive now. It also, for the rich hue of its flowers, should be in every collection.

Gentiana Verna.—Few persons are aware of the beauty of this charming plant, although it is a native of this country. It is scarcely ever seen excepting in its mountain home. In its habits of growth it forms dense tufts of deep-green foliage, which are smothered in early spring with brilliant blue flowers, generally with a yellow or white throat. It grows very freely on rockwork if kept moist, or on borders with plenty of drainage.

For these descriptions I am greatly indebted to Mr T. S. Ware's excellent list of Perennials, a most useful work of reference. By-and-by I hope to give a few more notes on some of the rarer of these fine and useful plants.

NEMO.

NEGLECTED PLANTS.

Canarina campanulata.—This fine old greenhouse herbaceous perennial, which was introduced as far back as 1696, is now very rarely met with indeed. Last spring I saw a large specimen of it, covered with as numerous orange-coloured bell-shaped flowers, and growing in a small conservatory, apparently receiving no extra care, and yet doing as well as the most ardent cultivator could desire to see it. As it blooms early in the winter and spring, it dies down in May, and the plant is then put out of doors in some shady place to rest. In August young growth appears breaking up from the root, like that which comes from a Dahlia, and the young shoots, if taken off, can be struck in a similar manner to the cuttings of the Dahlia. As it will not stand the lightest frost, it must be removed to a greenhouse ere frost sets in; and here the plant will make its growth, and flower before Christmas. Like the Dahlia, it will do with generous treatment: a good fibry loam, enriched with some manure, and helped with some sand, would suit it well. It is one of those neglected plants that richly deserve a much more extended cultivation, and the example referred to above I saw at Redbridge, near Southampton, the residence of Mr William Stride. The fine condition of the plant was highly creditable to the gardener, Mr Davis.

Zephyranthes rosea.—It seems scarcely possible to believe that this beautiful half-hardy bulb should have to be classed with the neglected plants, but so rarely is it now seen that the conclusion is inevitable. It cannot be because it is difficult to cultivate, for Mr Baines, gardener to H. L. Micholls, Esq., formerly of Manchester, at whose new residence—Southgate Park, near London—I recently saw it in bloom, says it is difficult to kill it; and, as it was here developed, I can conceive nothing more suitable for conservatory decoration at this season of the year. It remains in bloom quite two months; and when in bloom, it should be kept shaded to prolong the duration of the flowers: previously to that, it should have plenty of light and air. The ordinary treatment of the hardy kinds of Amaryllidaceous plants would appear to suit it well.

Anomatheca cruenta.—This is another somewhat neglected plant, though more frequently met with than either of the preceding. I also saw this at Southgate Park, growing in the same pot with the *Zephyranthes*, as well as in the pots of other Amaryllids. Mr Baines stated he encouraged it to grow in this fashion as much as possible, by saving the seed, and sprinkling it over the surface of the pots. The seed grows readily, and in this somewhat irregular way a good many pretty

dull crimson flowers are thus secured to cut from. It is also of being cultivated out of doors, and will bloom in borders, or in some soil made up of sandy peat. It is a bulbous-rooted plant, with an *Ixia*-like appearance of growth, and it can be increased by cuttings as well as by seed. R



METROSIDEROS FLORIBUNDA.

THIS plant is a native of New South Wales, and is consequently suited to the temperature and treatment required for most plants to thrive in and beautify our modern British conservatories. It grows to large dimensions, throwing out regular and well-formed showy branches, which give it an elegant and graceful appearance. It flowers freely. Before me is a specimen trained as a standard, 7 feet high, and 6 feet across, bearing forty spikes of its pretty like red flowers, and about as many more formed, but not yet opened. Each spike measures about $3\frac{1}{2}$ inches in length, and diameter; and the individual flowers, which are numerous, in brilliancy of colour that quickly attracts the eye, and commands admiration of the beholder. Besides those I have mentioned, it has other qualities, which, for the sake of brevity, I shall mention three principal features. First, then, it is easily cultivated, requiring no more than ordinary care; 2d, It remains almost free from attacks of those enemies of vegetable life—insects; 3d, In proportion to its size, it requires a comparatively limited area of matter on which to derive its sustenance; that means, in plain words, that its pot room need not be extensive.

I have known the *Metrosideros* grow luxuriantly in a compost formed of peat and turfy loam of equal parts, with some whitening added, the usual precautions as to drainage being, of course, attended to. The specimen I have referred to was always—after being out of doors for a few weeks in summer—kept in the conservatory where it now remains in all its summer grandeur to the admiration of observers. I shall only add that the subject of these lines merits the attention of all cultivators of this interesting and showy ornamental plants. R



HINTS FOR AMATEURS—AUGUST.

WHERE attention has been given to close cropping, every part of the vegetable garden will be well filled up, and the produce in great abundance. While we advocate "profusion," we have no sympathy with "confusion." It is necessary that space for winter Spinach, Onions, and Cabbage should be left, or provided by lifting Potatoes or trenching down Strawberries which are done with. Open, deep ground, free from rank manure, suits Spinach well: it often dies off at the necks when manure is fresh and near the surface. When sowing is to be done, the ground should be well watered beforehand if necessary, and the seeds not allowed to lie exposed long in the sun before they are covered up. Lettuce should be sown to stand the winter from the beginning to the third week of the month. The further north the position the earlier should be the sowing. Brown Coss, Hardy Hammersmith, and Brown Dutch are suitable for winter work. Lettuce (fit for use) should be in abundance now; and to do justice to that delicious vegetable, plenty of manure-water should be given. Shading is practised by some to get them crisp and sweet; but when wanted for culinary purposes, less attention is necessary. Sow and plant Endive; it requires blanching by tying up or placing flower-pots over the plants. Turnips for late work may still be sown in quantities in the south. They will not grow to much in the north after this time, but they should be tried. Cauliflower for protecting may be sown from the beginning to the third week of the month. Any seedlings which are to stand the winter should be made sturdy by being pricked out of the seed-rows before they become drawn up weakly. Globe Artichokes should have flowering stalks taken off as soon as they are unfit for use, and weakly plants may be helped by manure-water. Beans and Peas may be saved for seed if they cannot be used up; but if not wanted, they should be cleared off at once. Scarlet Runners and French Beans should have the pods taken off before they show fruit, otherwise they will soon be brought to an end. Leeks and Celery will be greatly benefited by plenty of manure-water. They both may be earthed up to blanch them, keeping their hearts clear. Onions well forward may have their necks twisted to ripen them. Strip outer leaves of Parsley and pull out coarse plants, and endeavour to secure a large supply to stand the winter. A quantity placed where protection can be given may be valuable when ground is frozen or covered with snow. Radish and other salads may be sown for some time to come, but still in small quantities and well watered; to keep these plentiful and good, much attention is required. Cucumbers and Melons require attention as formerly advised, keeping decay-

ing leaves off and preventing the shoots from becoming matted. Dungbeds (if getting cold and weather unfavourable) may have a good lining placed round them. Melons ripening their fruit should have plenty of air and be kept dry.

Let all necessary nailing and tying of fruit-trees be attended to once. Air and sun kept out at this season is much against the ripening of the wood; healthy clean foliage is of great importance. Fruits not netted are in great danger from the attacks of birds. Pick the fruit before it is over-ripe; go over it frequently so that none be lost. Bottles, in which is placed a little beer and sugar, will trap wasps and flies: hang them about the trees by their necks. Hexagon netting is very good for protection, as it lets in air and keeps out insects. Plant fresh plots of Strawberries; strong growing kinds on good deep ground require plenty of space apart. When the foliage becomes matted there is little chance of good supplies of fruit. Some kinds we find are not too close when planted $2\frac{1}{2}$ feet apart. Two or three years is long enough for the plants to bear fruit. We plant a piece and destroy the brake annually, which keeps the stock young and prepares the ground well for other crops. Runners not wanted should now be cleared off and the surface well cleaned. If young plants cannot be had for planting, the best of the crowns of old plants reduced and planted on well-prepared soil will fruit well next season; ground and labour will be saved by this practice; but young plants are preferable for planting.

In the ornamental garden all will be gay and orderly, and to keep all neat and clean frequent attention is necessary. To leave the garden till it becomes rough and untidy requires more work to bring it right, besides never having the same appearance as when attended to often. Walks kept smooth and hard, grass well mown, and plants kept within bounds, is of much more importance to keeping than continued raking. The hoe should be kept going as long as it can be done, and drought will do little harm. Roses should be gone over frequently and all decaying flowers taken off. Suckers require to be looked after sharply, on weakly growers especially. Cuttings of all sorts of bedding plants will require attention shortly. The young tops of healthy plants make the finest stock for keeping through the winter. A frame with sound lights answers well for most things, but free-growing Pelargoniums do well when planted in an open border full in the sun. When rooted they may be lifted and potted, or placed in their pots at once, and well attended to with water. Boxes or pans well drained and some soil (sandy loam) placed firmly in them, is as easy a method as any of securing stock to be kept through the winter: Heliotrope and other tender things may be put in first. Pelargoniums of the

scarce kinds may also be seen to early. Pansies and Violets may be propagated behind a wall; handlights placed over them for a time will help them much. Chrysanthemums will now require attention with manure-water, especially those with their roots confined in pots. Carnations and Picotees to be layered should be finished at once. Pinks which are rooted may be planted out. Dahlias and Hollyhocks on poor ground require plenty of manure-water. All soft-wood plants in frames require frequent attention to keep them free from insects; keep the drainage clear, the surfaces clean, and if nights become cold give water in the morning.

M. T.



O U V I R A N D R A F E N E S T R A L I S,

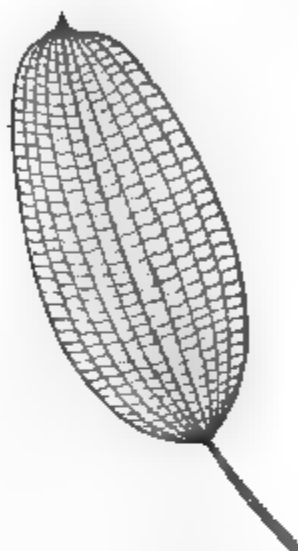
THE LATTICE PLANT OF MADAGASCAR.

AMONGST the many stove-plants cultivated for the beauty, elegance, or curious appearance of their foliage, there are many much more stately, but scarcely one more interesting, than the singular little aquatic plant that heads this paper. Years ago, some gentleman travelling in Madagascar discovered the Ouvirandra; but not being able to send home living specimens of it, he forwarded some dried ones, and these, for the curious and novel formation of their leaves, were highly prized at the time, and carefully preserved. About sixteen years ago, the Rev. William Ellis, so long associated with missionary enterprises in Madagascar, introduced some plants, and forwarded them to Kew, the first living examples of it ever introduced to England.

Since its introduction to this country it has never attained the popularity it unquestionably deserves: why, is not easily determined. One writer has described it as difficult to grow; another asserts the opposite, and says it is as easily grown as any other stove-plant. One cultivator has asserted that it has fallen into bad repute through being grown in too deep water; while, singularly enough, another contends that the cause of failure is through growing it in too shallow vessels. I think all these are wrong to some extent, and I hold the opinion that neglect has done more than anything else to narrow the scope of its cultivation. There are some cultivators who make a pet of a new plant for a time, but when something else turns up, or work presses on their hands, their enthusiasm cools, and plants are left to take care of themselves, and frequently to perish. It has been so with the Ouvirandra; and as it was growing in its natural element, water, they thought it would take no harm if left to itself for a week or two. The same neglect would have killed other stove-plants than this under notice. This is how it has been treated; and not having had even the ordinary

attention required by other plants, it has got the reputation of being difficult to cultivate. A cultivator who goes about his work systematically, can grow the *Ouvirandra* as well as any other plant under similar conditions; but inattention to changing the water has wrought much mischief, and seriously affected the health of the plants.

As some of your readers may not have seen this plant, I send a sketch of a single leaf of it. The leaves of the plant are entire, oblong



in shape, and the veins, except about five or six, which run longitudinally, are in parallel lines across the leaves, between which are little square holes or cavities, which give to it precisely the form of lattice-work, or a rope ladder; hence its common name, the Lattice plant. The leaves grow from 9 to 15 inches in length, and are of a beautiful dark-green hue. *O. Berneriana* is of much larger growth, producing leaves from 15 to 20 inches in length, and of a bright green colour, but they are not so open as those of *O. fenestralis*. They are both

well worth cultivation where space will permit. A good plant of *O. Berneriana* will fill a tub 3 feet in diameter, while an ordinary-sized plant of *O. fenestralis* will grow in an inverted bell-glass 18 inches in diameter—in fact, a very good thing in which to grow it, as it shows off the beauties of its leaves to the best advantage; while a large tub or slate cistern about 18 inches deep will be required for *O. Berneriana*.

But now to the cultivation of this interesting plant. Having decided on the material of which the vessel shall be composed in which the plant is to grow, whether of slate, wood, or glass, it should be plunged to one-third of its depth in bottom-heat in the warmest corner of the stove. This done, place 2 or 3 inches of clean washed gravel from the river-side over the bottom, and fill it up to the brim with rain-water previously heated to between 70° and 80°. The soil I have proved best suited to this plant is rough turfy loam, broken into small pieces with the hand, the very fine soil sifted from it, and one-third of coarse river-sand added. Prepare the pots, or pans, which are better, if to be had of a convenient size, in the same way as for other plants, by placing crocks at the bottom, and some of the largest pieces of turf on the top of these, to prevent the soil from mixing with them. If the plants are young seedlings with no ball to them, dip the roots in dry river-sand till they are quite covered with it before placing the plants in the pots. In the case of older plants, loosen as many of the roots as possible round the sides of the ball, spread them out on the top

the fresh soil, and sprinkle sand over them before filling up with soil. This prevents it from adhering to the roots. Keep the collar of the plants up to the level of the rim of the pot, and press the whole of the soil pretty firmly about it. Next place the pot on the floor, and water through a fine rose till the whole of the soil is thoroughly soaked, and every particle of soil washed off the leaves. Allow the plants to stand a few minutes till the water gets drained from them, when they may be gently placed in the aquarium. If the plants are small, place them within 5 or 6 inches of the surface by standing them on inverted pots, and as the leaves increase in length put them a couple of inches deeper. The best rule I can lay down for this is, have your plants so placed that the longest leaves just touch the surface of the water. I have no doubt some will dispute this, for I have seen them recommended to be planted so that they may have *eighteen inches* of water above the soil in which they grow. I have seen plants under this treatment, but never in such a healthy state as when grown nearer the surface. To try it, I once placed a young plant 15 inches below the surface, and the first leaf that was produced was $1\frac{1}{4}$ inch longer; but I found that it was the *stalk* that had gained so much, while the blade of the leaf was not in the least longer, but a quarter of an inch narrower. Now, the aim of cultivators should be to produce long broad leaves on short stout stalks. I have never yet seen those desirable qualities in plants grown in deep water. In the 'Treasure of Botany' it is stated that "the leaves grow in radiating clusters round the rhizome, and float just beneath the surface of the water, presenting a flat side to the light," and "it grows on the margins of running streams in shallow water."

"Fusileer" (who, I presume, has been at Madagascar to see) stated in the 'Field': "We never observed it in deep water, but in the shallows and scours of clear gravelly or pebbly streams. The leaves floated on the surface of the water, and the flowers, which were of a bluish lilac colour, grow on stems rising about a foot or 18 inches above the surface." From these statements I learn that the Ouvirandra grows in *shallow water*, in *clear running* streams. Now, it is easy to grow it near the surface of the water, but how are we to have a running stream at a temperature of 75° in our stoves? The greatest difficulty lies in keeping the water as warm, as sweet, and as clear as possible, and so nearly approaching the character of that in its native streams, where

"Soaring high, the mighty sun
Makes Britons seek the shades,
And wish for Britain's shores again,
Her mountains, streams, and glades."

I think this difficulty is got over as far as it can be got over without a real running stream, by keeping the plants *in pots near the surface*, where they can be washed daily when changing the water. A pot of water should be placed on the hot-water pipes, or elsewhere, to get heated every night; and at the usual time of watering other plants, empty the contents of this pot into the aquarium with some force on the leaves through a coarse rose. The aquarium should be set quite level, so that it may overflow all round. This mode of introducing the water keeps the leaves as clean as could be desired, and it never disturbs any sediment that may rest at the bottom so as to spoil the purity of the water. Further than this daily change of water, little attention is needed. Should any conferva make its appearance, the plants should be lifted out, and the aquarium emptied, thoroughly cleaned, and refilled with fresh water at once. The plants will be benefited by being occasionally lifted out and watered overhead, the same as directed to be done after potting, as the soil sometimes gets rather loose round the collar of the plants; but this is not necessary so long as the leaves are kept clean.

In conclusion, although I have recommended the plants to be kept near the surface of the water, I at the same time caution beginners not to attempt to grow them in *shallow* water. We are told that they grow in shallow water in their native habitat; but we must bear in mind that we have not got a continued circulation of fresh water passing amongst their leaves and roots from which they can derive a continual supply of food. The greater the body of water, the better are the chances of success with the plant.

R. J. G. P.



NEW SPOTTED FOXGLOVES.

ONE of the best additions made to our hardy herbaceous border-flowers during the past few years is the fine spotted varieties of *Digitalis purpurea*, sent out three years ago by Messrs Ivery & Son, Dorking. I saw a collection of spikes, exhibited by this well-known nursery firm, at one of the meetings of the Royal Horticultural Society at South Kensington; and so fine were they, that they attracted crowds of admirers about them. From a packet of seed I succeeded in raising a good number of plants, varied in character and finely marked, and for the last six weeks they have been much admired in these gardens; and the freedom with which they throw out lateral blooming shoots, promises that they will continue in bloom for some time to come.

Their undoubted value as decorative border-plants has induced me to

send you these few lines, in the hope that others will be induced to grow them. For shrubbery margins, or for woodland walks, scarcely anything can be more acceptable; and being very hardy, as well as careless as to the nature of the soil, provided it be soil, there is no difficulty about their management. Like other flowers, however, they amply repay a generous treatment: in proportion to the stimulus they gather from the soil, will be the beauty of their development.

The seed may be sown where the plants are to bloom, but it is far better to sow it in a pan; and when the plants are large enough, prick them out on a shady border, and transplant them to their blooming quarters in the autumn. The Foxglove is a biennial, therefore the plants raised one summer will not bloom till the following season. If the soil in which they are planted be good, they will grow to a height of 3 or 4 feet, with a spike of flowers at least 2 feet in length; when so grown, they are really beautiful objects. I have some white flowers with crimson, others with purple, and some with brown spots; some of these spots are small in size, others so large as to be actually blotches of colour. The old type of *Digitalis purpurea* has been wonderfully improved, and in its old form it should now be discarded from our gardens. There are now several shades of purple—some so bright in hue as to partake of a red colour; others so soft as to be of a pale lilac hue.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



NATIONAL TULIP SHOW.

THE following notes on some of the flowers exhibited at this exhibition have been furnished to us by Mr Thomas Haynes of Derby, a successful cultivator and exhibitor. After the awards were made, some of the leading growers went round the show and noted down the flowers that were shown particularly well on this occasion. It is gratifying to know that many cultivators of the Tulip are readers of the 'Gardener,' and the publication of these notes will be appreciated by them.

Class I.—1. Mr Barlow Martin's No. 101 feathered Bybloemen, very pretty, much in the style of Denman, but an improvement on that old variety. Sir J. Paxton was grand, and deservedly obtained the premium prize as the best flamed lower in the exhibition. Mrs Lea, good; Aglaia, good; Charmer (Martin), a bright rose, very beautiful, but the petals are rather narrow; Duchess of Sutherland (Walker), good; Celestial, large and good; Talisman (Hardy), feathered Bybloemen, most beautiful; Polyphemus, grand; Sovereign, good; Bacchus, good. This stand was very closely run by Mr Headly's, whose flowers, however, were a little past their best, and were being severely tried by the heat of the day. 2. Mr Headly—Wm. E. Gladstone, feathered bybloemen, is first-class, certainly one of the best; Circe, flamed Rose—the same may be said of this, quite in the style of, and very like, a good Sarah Headly; Prince of Wales, flamed

bizarre: this was very fine, large, and beautifully marked, but hardly strong enough in colour. The above are seedlings of Mr Headly, and they do him credit. Sarah Headly was grandly feathered. John Kemble, flamed bybloemen, John Thornley, flamed bybloemen, and Dr Hardy (Storer), were all exceedingly fine. 3. David Barber—Mrs Pickerell, grand; this was the premier feathered flower of the exhibition. Heroine was good. Jacomb's Perfection, feathered bizarre, is a sort little known, but it is rightly named; it is one of the best of its class, and is certainly the richest of colour of any bizarre in cultivation. Paxton was good, Alexander Magnus good, but too long. This stand of flowers contained the best-grown specimens in the exhibition; and had the show been two days earlier, it must have been first instead of third. 4. William Lea.—Industry, feathered, grand; Talisman (Hardy), grand. This is a sort that will be looked after, but we think it will have to be shown young, as the outside petals seem inclined to reflex. This was observable in each case where it was exhibited. Paxton, feathered, was in fine style, so was Adonis, flamed; and Dr Hardy, Queen of the North, Lord Byron, and Heroine, were all pretty.

Class II.—1. Rev. S. Cresswell.—George Hayward, feathered, was good; a feathered bizarre of Storer (no name) was also good. Nepaulese Prince, flamed bybloemen, good, and a feathered Vicar of Radford the best we remember to have seen. 2. Mr Willison; John Sanderson, ex. ex. ex.—Eliza, flamed bybloemen (Willison), is a good thing, and worth looking after. Mrs Sharp, feathered bybloemen, heavy but good. Juliet, feathered, the first we have seen, was good, and much like Heroine. Juliet, flamed, was also very pretty. 3. Mr Haynes.—Paxton flamed and Paxton feathered were both good. Beatrice, feathered bybloemen (Haynes), beautiful. Sarah Ann (Gibbon), an old flower, but when caught in character, is equal to anything in its class. Orion, feathered bizarre (Storer), and Mrs Lea, that had been good. 4. Mr Pickerell.—Paxton, good; Aglaia, good, and Victoria, feathered, the best we have ever seen grown in the midland counties.

Class III.—6 Dissimilars.—1. Mr Barber. In this stand Mrs Pickerell and Spencer's First-rate were good, the others nothing to speak of. 2. Mr Pickerell.—Paxton, Pickerell, and Aglaia, were all good flowers. 3. Mr Willison.—Henry Steward, feathered bizarre, is a first-class flower; so is Sarah Leach, flamed bybloemen; Invincible, feathered bybloemen, was good; and so was Captivator, flamed rose; and Paxton, flamed. We think this stand was better than the first. 4. Mr Sharp.—Paxton, Heroine, Adonis, and Demosthenes were all good. 5. Mr Headly.—Mrs Pickerell was the best of the lot; Dr Hardy was good, and so was Arethusa, feathered Rose, much in the style of Sarah Headly. 6. Mr Haynes.—Masterpiece, grand; Dr Hardy, grand; Adonis had been fine, but now quartered; Talisman, flamed, ex. ex. ex., but outside petals reflexed with old age and hot weather. The flowers in this had been very fine, but were two and three days past their best.

In the first stand of 3 Feathers (Lea) all were good; 2. (Sharp), do. do.; 3. (Haynes), do. do.; 4. (Barlow) contained a very beautiful but small Violet Amiable, and a good Heroine; 5. (William Lea, jun.) contained some nice flowers, but all small.

Among the beaten stands in this class were Headly's Pactolus, very grand, and Lord Byron, Industry, and Fairy Queen, all very beautiful.

In first three flames (Haynes) was a very fine Denman. In 2d do. (Willison) was British Queen and Sir J. Paxton in fine character. In 3d do. (Hextall) was Smith's Prince of Wales, flamed bizarre, good, and Walker's Duchess of Sutherland—the best bloom of the sort in the exhibition. In 4th do. (Pickerell) was a

nice bloom of Orion (Storer) after the style of Dr Hardy, but not equal to it. 5th do. (Mr Shorthouse.)

In stands of 6 Breeders Mr Headly was first with six good seedlings, especially one of the Roses, which took the premier prize for Breeders, and which was, we think, the finest Rose Breeder we ever saw. Mr Haynes came second with six really good Breeders, the most noticeable of which was a fine large seedling bybloemen and two good Roses—Oliver and Parker's Rose of England. Mr Barlow was 3d, and the best blooms were Lucretia, rose, Talisman bybloemen, and William Lee, bizarre. Mr Lea was 4th, and in his stand was a very good bizarre Ariosto (Slater), and one or two good seedlings.

THOMAS HAYNES.

DERBY.



GARDEN RECORDS.

NO. VIII.

MESSRS PAUL & SON, THE OLD NURSERIES, CHESHUNT, HERTS.

(Continued from page 274.)

THESE well-known Nurseries have played a most important part in the progress of horticulture during the present century. The Rose, the Hollyhock, and many other popular flowers have here found and still do find a congenial home. Wherever the progress of floriculture during the last fifty years is sketched it will be found that the Cheshunt Nurseries are related to many of its most valued triumphs, and have played an important part in helping to secure some of its most noted successes.

Cheshunt is about 13 miles from London, on one of the north high roads, that leading to Hertford and Cambridge. The dwelling-house, together with the shop and office adjoining, are well known to frequenters of that road; hundreds who do not know the locality, or have never seen the nurseries, have heard of them, and have come to regard them as one of those high places of floriculture that take the form of shrines to which florists instinctively turn their footsteps, as a place full of pleasant revelations and undescribed delights. The grandfather of Mr George Paul, the present proprietor, established the Cheshunt nurseries about sixty years ago. The site of the original nursery stood back some distance from the dwelling-house, and it is said it was once the site of the trial grounds of Messrs Minier, Nash, and Nash, the wholesale seedsmen of the Strand. This spot is now the Peach and Strawberry nursery. At the period of our visit we found here an excellent treat of Strawberries, as Messrs Paul and Son grow these largely as a staple article of trade. That superb variety Dr Hogg was in prime condition; so were many more of the leading kinds, for notwithstanding the rough a liberal mulching and plentiful supplies of water had brought the fruits to a high state of perfection. Next, there was added the Church Fields nursery, a piece of land of about 12 acres, situated near to the parish church of Cheshunt. Here, on the occasion of our visit, was spread out a glorious feast of Roses, there being about 40,000 standard Roses worked on the briar, and dwarf Roses worked on the Manetti stock, in the full flush of their superb floral beauty. The requirements of the growing trade made it necessary that new land should be added, and the home nursery of about 15 acres, with some outlying pieces of land, 4 acres in

all, were joined to the ground already under cultivation. Here there were planted out in the open ground some 40,000 standard and dwarf Roses, besides seedlings; there were also a large number of pot-Roses, Coniferæ, Ornamental Trees, Evergreens, &c., in common with many other plants found in a nursery of such great extent. In 1860 was added what is known as the Roselands Nursery, a fine piece of land about 24 acres in extent, having a fine fresh Rose soil; and here, in addition to standard Roses almost without number, can also be seen a wonderful collection of all kinds of pyramidal, standard, and dwarf trained fruit-trees in superb condition, having all that fine and free development a deep, generous loamy soil can impart to them. Mr George Paul informed us that the Roses here would amount to something like 40,000 in number. Away at High Beech, a few miles north-west of the home nursery, is a further nursery of 15 acres, devoted to the culture of American plants, Hollies, &c., all in thriving condition, and doing as well as could be wished. Such is a general sketch of the disposition of the several pieces of land making up the Cheshunt Nurseries.

No one can have walked through these nurseries—every part of them during the present summer—without being struck with the order and cleanliness everywhere observed. Mr George Paul appears to regard his nurseries with the eye of an artist; a mass of weeds here, or an untidy spot there, would mar the effect of the pleasant picture he has in his nurseries. Their condition reflects the highest credit on his management: it is also seen in the quality of the stuff he grows. Deep and constant hoeing is another characteristic of the order in which the nurseries are kept. Never before, perhaps, has a dry summer better illustrated the advantages of deep hoeing, and a constant stirring of the surface, than the prevailing drought has at Cheshunt during the past few months. A man who not only hoes deeply, but takes a pride in the quality of his work, is a man Mr Paul rates at a high value, and he encourages him in a liberal manner.

We have already alluded to the high-class character of the fruit-trees, and the same praise is deserved in the condition of all kinds of nursery stock. The land shows the prevalence of drought, but the stock scarcely; all was healthy, vigorous, and doing well. To particularise would be to go through all the various items forming an extensive and varied stock; but such things as a grand lot of standard Limes, dwarf-trained Nectarines, Peaches, Plums, Cherries, and Apricots, trees of many kinds, shrubs, &c., were all in prime condition. That more useful class of trees and shrubs, those with variegated and ornamental foliage, are largely looked after, and almost complete collections have been gathered together. Variegated Sycamores, Ash, Acers, and many other things can be seen; and in the spring time, when the young growth is fresh and at its best, the lover of pictorial trees will find a great field for study opened up in these grounds. In one part of the nursery grounds were to be seen collections of the several species and varieties of Lilacs, Weigelias, Spireas, &c., as interesting to the botanist as they are to the practical horticulturist. Immense quantities of *Aucuba Japonica* were to be seen in one of the nurseries, grown mainly to supply the London costermongers with plants, which they pot and sell as window plants during the winter. As a general rule, a very large number of these get starved for want of water—a failing common to window gardeners in large cities, and especially in London, where such an extensive migratory population exists—but the demand is always a large one, and the supply must keep pace with it.

Remembering how much the cultivators of the Hollyhock owe to the Cheshunt Nurseries, how much of its glorious past was fostered by the care bestowed on its cultivation and intelligence brought to bear upon its improvement there, it was pleasant to note that it is again being grown; that a large piece of ground

had been planted with all the leading kinds, and that many seedlings had been planted out for trial. Mulching and due attention to watering was developing a fine growth, full of promise of rich heads of flower.

But who can do justice to the priceless treasures of the rich collections of Roses grown here? We saw them in the fulness of their splendid blossoms; and how these flowers have been developed at the Cheshunt Nurseries during the present summer let the exhibition-tables at the leading Rose-shows testify. There was acre after acre of Roses, of almost every imaginable hue of colour, spread out before the beholder.

“The imperishable glow
Of summer sunshine never more confessed
The harmony of nature, the divine
Diffusive spirit of the beautiful.”

Whether or no Mr George Paul be one of those cultivators of the Rose who grow it for exhibition, and as was sought to be not very good-naturedly implied not long since, to the deterioration of the plant in regard to its fitness for sale, certain it is that, judging from the quality of the many thousand standard and dwarf Roses to be found here, no purchaser need fear as to the nature of the article to be supplied by-and-by. We should have every confidence in the Roses supplied from Cheshunt, even though Mr Paul is an exhibitor, and a very successful one too.

Descriptive notes of some of the new Roses of last year, as taken on the occasion of our visit, cannot fail to have an interest for our readers. We had not an opportunity of seeing all the new varieties of 1869, but the following were some of the best of them:—Hybrid Perpetuals—Abbé Giraudier, a darker and finer form of the old Lœlia, and a seedling from it, flowers large, full, and of fine form; Candide, a white Victor Verdier, very pretty indeed, and promising to be a fine forcing Rose; Charles Turner, bright glossy red, a fine hue of colour, but the flowers somewhat shallow in the build; Comtesse de Oxford, a cherry-crimson coloured Victor Verdier, but of better shape; Jules Seurre, a Victor-Verdier type of flower with the colour of Anna Alexieff, of fine shape and capital habit; Louis Van Houtte, a high-coloured shaded rose, very fine indeed as a bud, a flower in the way of Louis XIV., but with better growth; Madame Laurent, an improved Madame Therese Levet, but with more colour in it, a fine hue of deep cherry-rose; Madlle. Eugenie Verdier, a very good Rose, and very fine as a bud, colour deep-flesh; Marquis de Castellane, a rose-coloured Baroness A. de Rothschild, having the fine build, globular form, and fulness of this fine Rose, but with the addition of a fine depth of colour—one of the best of the new Roses; Paul Neron, a fine Rose in the way of Gloire de Vitry, of excellent habits and very free; and Reine des Beautés, like Candide, a white Victor Verdier, more globular in shape, and rather paler in colour also. Noisette, Rêve d'Or, a climbing Madame Falcot, but fuller, and with more freedom of bloom; Tea-scented Madame Ducher, one of the fine seedlings raised from Gloire de Dijon; this is in the way of Devoniensis, but with the build of Triomphe de Rennes; and Tour Bertrand, another seedling from Gloire de Dijon, of fine shape, and finely coloured in the centre.

Many of the new Roses of 1868 were in bloom, and gave us an opportunity of further testing their qualities. The following Hybrid Perpetuals were of fine quality: Bertha Baron, beautiful light rose, a free blooming variety, and good flower; Devienne Larny, deep reddish carmine, very fine and full, in the way of Madame Victor Verdier, but more globular in shape; Dupuy Jamain, bright

cherry-red and violet, very fine petal, and great depth of substance; Edward Morren, a very fine and full flower, promising to become a good standard rose; Emilie Hausburg, pale glossy rose colour, in the way of Madame D. Duville, charming shape; Henri Ledechaux, a very fine rose of a beautiful hue of bright cherry carmine; Julie Touvais, light rose, flushed with a deeper colour, a little rough, but of fine substance; Leopold II., salmon rose, a showy garden variety, that comes fine early in the season; Madame Creyton, deep carmine rose, a very fine autumnal flowering variety; Madame Decour, fine bright rose, very good; Madame Farfouillon, mauve, with salmon centre, dwarf habit, and very pretty; Madame Lierval, clear rose, a capital garden variety, very free, and fine for beds; Marquis de Mortemart, a splendid flower, colour, very bright light rose, form and substance fine; Nardy Freres, violet rose, very fine, free, and a good grower; Perfection de Lyon, deep rose, flowers full, very free, and a fine grower; Reine Blanche, white, very slightly tinted with rose, very fine in the bud, and a free bloomer; René Dacciol, deep cherry red, flushed with purple, in the way of Dupuy Jamain, but with more colour in the centre, a fine grower; Souvenir de Poiteau, bright salmon rose, quite a new colour, very fine and full; Thy Hammerich, very light flesh colour, very free and dwarf growth; and Victor de Bihan, bright rosy carmine, very fine and full, promising to be a fine autumnal rose. Some descriptive notes of the older kinds must stand over till our next number.

Standard Tea-Roses were not only very numerous, but finely developed at Cheshunt. All kinds of Tea-Roses appear to be at home here, but the Standards particularly so. We noticed a piece of Standards, one year from the bud, of such kinds as Maréchal Niel, Triomphe de Rennes, La Marque, and others, of very vigorous development. In one part of the ground some Standard trees of the pretty Macartney Rose, Berberifolia, with yellow flowers spotted with maroon, which makes a charming head of bloom when grown in this way; also the Perpetual Scotch Rose, Stanwell Hybrid, Blush Rose flowers, large and double, blooming very freely and continuously. The Seedling Roses at Cheshunt will have to be reported on at a later date. We saw there in the bud, one from Alfred Colomb, one from Charles Lefebvre, and one from Duke of Edinburgh, all very promising, and of rich shades of colour; we also saw a sport from Victor Verdier, with a climbing habit and half pendulous leaves, promising to make a good pillar Rose.

It must not be supposed we have touched on all the subjects found at the Cheshunt Nurseries, for there can be seen a general collection of all those plants to be found in so extensive a place. If any visitor to London should find his way to Cheshunt at any time, and especially at the Rose season, he will not only have discovered how to spend a happy day, but he will also be instructed by such visit, and find there many lessons of profit waiting to be stored up in his treasury of knowledge.



WEEKS' UPRIGHT TUBULAR BOILER, with Patent Duplex Compensating Improvements.

We are enabled to give an illustration of this boiler, and from an inspection of its mechanism, have reached the conclusion that it appears likely to answer well the end for which it has been designed. The inventors consider it to be the most unique and perfect thing of

kind that has ever been brought to the notice of the horticultural world, and in all the attempts to bring it into action, it has answered beyond their most sanguine expectations. Its durability is one special feature, and the patentees are prepared to guarantee and insure policy its usefulness and safety for a space of 15 years.

Absolute exemption from failure is also claimed for it on the ground that it is constructed in two halves; the construction and expansion are equally neutralised; and should any unforeseen accident occur to one half, that portion may be detached and removed, without in any way



interfering with the working of the other half. Thus it is termed indestructible." The shutting-off of either half from active work is accomplished by means of an improved gun-metal screw, valves and chambers.

The arrangements for removing sediment are so perfect and simple, that any ordinary labourer may clean out the boiler at any time by drawing the water from the apparatus, or removing a single brick in the furnace. This is stated to be an advantage no other boiler used for horticultural purposes can lay claim to. The boiler being con-

structed of cast iron, is considered more durable in every respect than if formed of wrought iron ; and being in sections, it may be passed through any doorway that is 18 inches in width.



NOTES ON SOME FLOWERS AND GRASSES SUITABLE FOR DRYING.

POSSIBLY some of the readers of the 'Gardener' who do not possess a stove or other heated structure in which to grow flowers all the year round, find it at times very difficult to obtain them for the decoration of the dinner-table and other purposes of house ornamentation. To those so situated I would recommend the following flowers and grasses, all of which come under the general head of Everlastings, as suitable for drying, and so capable of being turned to account when fresh flowers may not be obtainable.

Of these the *Helichrysums* are a most interesting class of plants. They are easily cultivated, and, if the flowers be cut before the disc becomes fully expanded, will retain their colour for upwards of two years. *Rhodanthe manglesii* and some of its varieties are also well worth growing for the same purpose, but they require a warm situation. *Ammobium alatum* is another, and, as its generic name indicates, will thrive in a poor sandy soil. *Waitzia*, or *Morna*, *grandiflora*, I may mention, requires the protection of glass, unless in the more southern counties of England, where it may be planted out of doors after the middle of June. The *Apholexis* is allied to the *Helichrysum* ; all of them are greenhouse evergreen shrubs, but they are not one and all hardy. The *Statice*s are a numerous class, and so useful that they must be included in this list. Several kinds of *Gnaphalium*, together with the varieties of *Gomphrena globosa*, or the Globe amaranth, are more or less pretty, especially the latter, and well deserving more extended cultivation. *Humea elegans* is not by any means to be despised. When dried, its bronzy-red spikes show to great advantage, when other things of the same character are not so plentiful. The *Xeranthemum* is a true Everlasting ; the flowers, after being dried, may be, and are, dyed of any colour, and it can be grown from seeds sown in the open border. *Accroclinium roseum* must also be in this list. Many others might be named, but these are sufficient for the purpose at present.

In the way of grasses, as suitable for use with the above-mentioned, the following will be found to afford much satisfaction to those who have not hitherto grown them, and are not well acquainted with them.

elegant tribe of plants: *Agrostis argentea*, *A. pulchella*, and *A. nebulosa*; *Briza maxima*, and the lesser species, *B. gracilis*; the graceful and useful *Eragrostis elegans*; *Lajurus ovatus*, *Stipa pinnata*, or the common Feather Grass of the seed-shops, a British plant capable of propagation either by root division or by seeds, and will grow in any common soil. The Pampas Grass is also found useful: the elegant and stately inflorescences of this fine grass can be easily preserved, and retained in use for a considerable time.

Such are a few of the more useful of flowers and grasses capable of preservation. Those unaccustomed to their use are scarcely aware of the excellent effect they have when grouped in epergnes and suchlike for the decoration of the dinner-table.

WILLIAM CHISHOLM.

BOUGHTON PLACE, MAIDSTONE.



HURSLEY PARK AND GARDENS, WINCHESTER,

THE SEAT OF SIR WILLIAM HEATHCOTE, BART.

THE visitor from the direction of Southampton will find, at this season of the year, a pleasant walk from the station at Chandler's Ford to the lower lodge entrance to this fine domain; and having gained this point, he will find also that to reach the gardens he must traverse a well-worn footway, about one-third of a mile in length, right across the park; and which, if he is of an inquiring mind, will prove to him, as it did to ourselves, not the least interesting portion of the journey.

First, however, let me state of the park itself, that it comprises an area of some 500 acres in extent, is pleasantly undulating and finely timbered, some of the individual trees possessing enormous proportions; whilst beautiful groups of Chestnuts, Elms, Limes, &c., lend a leafy effect that is quite charming. Some 300 head of deer browse within the park, besides considerable herds of cattle; and these have eaten the whole of the branches from the base of all the trees to within 7 feet from the ground, so that there is an evenness throughout the park in this respect which adds greatly to its beauty; whilst the range of vision is neither marred nor broken, and the fine sturdy stems of the trees form a most pleasing feature in the landscape.

Starting from the lodge in our walk to the gardens, we come almost immediately upon the schoolboys' cricket-ground, on which the boys of the Hursley School are permitted to play whensoever they list. Still a little farther, and we reach that portion of the park on which the members of the Hursley Cricket Club practise, and where, on summer Sunday evenings, with the full concurrence of the worthy baronet, the labouring men of the parish play the noble game, and disport themselves in the innocent pastime, whilst their families and friends can enjoy without stint the full delights of the fine park and its sylvan scenery. Just away to the right hand we catch sight of the church, so long the scene of the labours of the late John Keble, the author of the 'Christian Year,' and from whence a private footway, running under a fine avenue of walnut-trees, leads to the mansion, where also I will carry at once the attention of your readers.

The principal front of the building faces in a southerly direction, and enjoys a

rich and commanding view over a wide extent of wooded scenery. The centre portion consists of red brick with stone facings, flanked on either side by large wings of entire red brick. The mansion is a huge square building in form, and presents all those features of strength, massiveness, and durability, so characteristic of our best English country residences.

Immediately in front of the house runs parallel to it a broad terrace-walk, on the right hand of which is a narrow Italian flower-garden, whilst on the left sweeps away to the south a smooth expanse of turf, about 2 acres in extent, and which is bordered on either side by belts of fine Elms and other trees. This forms a delightful grassy glade, on which archery and croquet can be indulged in *ad libitum*. Passing on in a westerly direction, we pass a pretty sunken Rose-garden, and then, diverging to the right, the path leads through large masses of Rhododendrons, seedling forms of *R. ponticum*, as well as fine hybrid varieties, Kalmias, Laurels, and other fine shrubs that stand here and there upon the grass, down to a trio of extremely fine specimens of the Lime-tree, *Tilia Europæa parvifolia*, of the most noble dimensions, one of which is nearly 100 yards in circumference. From this point we turn to the left, and shortly enter an enclosed Rhododendron garden, which lies lower than the surrounding ground, and at the western extremity of which stands a pretty elevated summer-house, built in the form of a Swiss *chalet*, access to which is obtained from the outside by means of steps and a balcony, from which the spectator looks down upon an entirely unique rockery of the most informal kind, and upon which are growing in great profusion a large variety of our hardy British Ferns, chief amongst which were fine specimens of the Royal Fern, *Osmunda regalis*. The rock-work resembles mountainous and rugged scenery in its formation, and in one corner is a miniature lake, in which fish disport themselves in great serenity. This secluded spot forms a most delightful retreat, and might almost tempt the busy man of the world to turn hermit, so quiet are its surroundings. We now wend our way along the southern side of the pleasure-grounds, passing some fine specimen *Magnolia acuminata*, of great size, and covered with most luxuriant foliage. These trees blossom freely in the early months of summer. Then past a secluded poultry-yard and orchard, where the feathered occupants are confined to their proper limits by means of a tall wire-fence, and we come upon an interesting object, in the shape of a grove of the Ailanthus tree, *Ailanthus glandulosa*, of a circular form, and which is protected all over the top and sides by a close wire-netting, so that the birds may be excluded, lest they should prey upon the caterpillars, or Ailanthus silkworm, that during the summer months feed and thrive upon the enclosed leafage.

This species of the silkworm was introduced from China about the year 1856, and differs materially from the Bombyx or Mulberry silkworm, both in its habits and the nature of the material it produces. Both insect and tree are rapidly becoming acclimatised, and the silk produced by each caterpillar is larger in quantity, but not so fine in quality, as that produced by its Mulberry namesake. The eggs are deposited by the moth in about three days after it has emerged from the cocoon, and these are hatched in fourteen days, when the young insects are placed upon the Ailanthus trees by some convenient mode, and they eat and thrive until they attain a length of from 3 to 4 inches. The caterpillars are green in colour, and apparently resemble the well-known Potato variety. At the age of from seven to eight weeks the cocoon is spun into a leaf of the Ailanthus, when they are carefully gathered and run on to a string and suspended for the winter in a dry room, in which state the chrysalis remains until the spring, when it emerges in the form of a moth, and once more the quickened insect life

commences. The growth and preservation of the Ailanthus silkworm, as carried out at Hursley Park, under the immediate superintendence of Lady Heathcote, is simply experimental in its character, but its value for commercial purposes is to be tested.

From this interesting feature we pass on to the kitchen-gardens, which are situated on the east side of the pleasure-grounds, and indeed formed our starting-point, but the consideration and notice of which we deferred until the other portions of this fine place had been scanned, the department of vegetable gardening constituting the special reason why the gardens here were made the subject of the present illustration.

The whole of the grounds covered by the mansion and offices, lawn, shrubberies, and kitchen-gardens, consists of about 18 acres, and is enclosed from the path by a ring-fence, sufficiently high to exclude the deer. The kitchen-gardens comprise about 6 acres of this enclosure, 4 acres of which are surrounded on the north, east, and south sides with a high brick wall, the outer sides of which are devoted to the growth of trained pear-trees of all the best kinds, which are this season in fine health, and producing a heavy crop of fruit. A wide border in front of these trees is devoted to the culture of vegetables, and on its outer edge is a long line of circular-trained Apple-trees running from the north-eastern to the south-western corners, a broad grass walk again bordering the whole.

Inside the walled garden we find that in the centre, and running its entire length, is a very broad smoothly-mown grass walk, the same being carried cross-wise. On either side of this walk is an herbaceous border, in which many of our old favourite plants are cultivated, the back of each border being fenced off by continuous lengths of trained espalier fruit-trees, the quarters devoted to vegetable culture being within. The inside portions of the walls are devoted to the growth of stone fruits; but the trees here, as in too many other gardens, bear evidence that our English climate has gradually become unsuitable to the culture in the open air of the more tender and choice fruits. Singularly enough, however, there is growing, in a sheltered corner in the garden, a large Violet Hative Actarine tree, trained upon a trellis in umbrella fashion, that has not received any other protection than its situation affords, and is literally loaded with fruit that will ripen in September. This is a decided novelty, and is also an entire exception to the general rule.

The glass-houses are limited in extent, and are devoted almost exclusively to the growth of Grapes and the housing of plants in winter. These are enclosed by a remarkable Yew hedge, some 8 or 9 feet through, and which looks like a massive green rampart, so smooth and neat is it kept.

In furnishing from year to year the vegetable supplies requisite for a large private establishment, such as generally constitutes the household of a wealthy English gentleman, the gardener is called upon to exercise considerable forethought and good judgment; but that such essentials are not lacking here, a walk through the vegetable department will speedily show; and we now will glance at the crops as at present under cultivation to illustrate this. Of course, Peas are largely grown. The earliest sowings are put in in a warm border in February, and consist of First Crop and Sangster's No. 1, succeeded by Taber's Perfection and Dickson's First Early. Then large sowings of Champion of England, Laxton's Supreme, British Queen, Veitch's Perfection, and a fine late selected variety having the local appellation of "Merdon Castle." The gatherings commence at the end of May, and continue to the end of October. As will be seen by the above list, tall kinds are mostly grown for the main crops; but sticks are plentiful here, the expense of which is generally a grave question. Of Potatoes, early and

second early kinds are grown in the garden, the best and earliest of which seems to be Veitch's Improved Ashley's, a new variety, which is strongly recommended for its excellent table and cropping qualities. Some are raised in frames for the earliest supply, and are succeeded by those raised in the open air. The old Ash-leaf is also largely grown, and is followed by the Early Lapstone and the Milky White, both capital table varieties. Early Kidney Beans are forced in frames for Easter Day, and a large quantity grown in the open garden; added to which, that valuable Bean, the Scarlet Runner, gets considerable space. Broad Beans are not neglected, the earliest being Long Pods, followed by Johnston's Wonderful, and that very useful dwarf kind, Beck's Green Gem. Large beds of both Asparagus and Seakale are grown, and some raised for forcing every winter, for cutting on Christmas Day. Rhubarb is put into the Mushroom-house, and gathered from November until May. Cauliflowers grow here to great size; that capital variety, the Early Dwarf Mammoth, being the favourite. These are wintered as young plants in frames, and put out under handlights in early spring, being cut from at the end of May. Supplies are maintained all through the summer and autumn, the Broccoli tribe continuing the supply all through the winter. Of these the earliest is Snow's Winter White, and the Penzance, succeeded by Backhouse's Protecting, Dilcock's Bride, and Cattell's Eclipse, which furnish cuttings up to May. Added to these, needing special mention, is Veitch's Wilcove Improved, which promises to be the best late kind out. Cabbages are always in season; the sorts chiefly grown are Atkin's Matchless and Wheeler's Imperial. An early planting of Brussels Sprouts takes place at the end of May, and another later on is put amongst the Potatoes: this useful vegetable is largely grown, and is supplemented by the Albert Sprouts, Early Ulm, and dwarf Green Curled Savoy, Scotch Kale, Buda Kale, and Couve Tronchuda, all capital winter greens. Very large beds of Onions, Carrots, and Parsnips are sown in drills 1 foot apart in March, and first-rate they looked. Lettuces for the summer are Paris White and Green Cos, and for winter, Bath Cos, and all the year round maintaining a constant supply, which is largely assisted by Endive. Of Celery, the Sandringham White and Matchless Red, both fine solid kinds, are extensively cultivated. There are also many other useful vegetables grown that we must forbear to mention. Suffice it to say that nothing needful is lacking in its proper season.

And now, in conclusion, we have to acknowledge to Mr John Heath, the hon. baronet's respected gardener, our sincere thanks for his great kindness and hospitality, and depart with wishes for his welfare and that of his highly-esteemed employer.

O. S.



HORTICULTURAL EXHIBITIONS.

ROYAL BOTANIC SOCIETY, June 22.—This was another very poor show, altogether unlike the displays that used to be made here a few years ago. So much has the schedule been cut down, that exhibitors scarcely care to bring their plants; and the groups of stove and greenhouse plants arranged for effect were of a very ordinary kind. Such a class as this admits of a great deal of stuff that is little better than rubbish being mixed in with what is of a respectable appearance.

On this occasion only two groups were shown in competition, Messrs J. & C. Lee, of Hammersmith, securing the first prize, and Messrs Arthur Henderson & Co. the second. In neither case was the exhibition at all striking, yet the large sum of £25 was taken between the two. Messrs E. G. Henderson & Son sent

a collection of bedding-plants, similar to that shown at the last exhibition, and secured a first prize; a second award being made to Mr John Aldred, Kilburn, for a modest but pleasing display, including a faithful representation of an anchor—presumably of Hope—worked out with *Pyrethrum* Golden Feather and blue *Lobelias*. Mr. R. Parker, Tooting, had the best collection of 24 hardy herbaceous plants, including excellent specimens of *Betonica grandiflora*, *Oenothera venusta*, fine yellow; *Pæonia albiflora* Lucrece, large, white, and rose; *Potentilla hybrida* William Rollisson, with large semi-double orange-scarlet flowers; *Tradescantia virginica alba*, and *Pyrethrum*, &c. A neat collection of 20 moderate-sized greenhouse plants, in 8-inch pots, came from Messrs Jackson & Son, and a first prize was awarded. Some very good Heaths were contributed by Mr J. Carr, Mr J. Wheeler, Mr J. Ward, Messrs Jackson & Son, and Mr Ransley Tanton, and lent much towards enlivening the exhibition tent. Mr B. S. Williams sent the best 6 Orchids, including a magnificent *Cypripedium*; and Mr Ward the best 8 in the amateurs' class; Mr Bull being second in the former, Mr I. Hill taking a similar position in the latter class.

Fuchsias in pots were pretty well done, both in the amateurs' and nursery-men's classes. The best in the latter case were staged by Mr Cannell, of Woolwich, who had *Alba coccinea*, *Lizzie Hexham*, *Puritani*, *Lustre*, *Starlight*, and *Try-me-Oh*. Show *Pelargoniums* were past their best, though nicely shown: of *Zonal Pelargoniums*, Mr J. Catlin, gardener to Mrs Lermite, Finchley, had well-grown and finely-flowered plants of *Clipper*, *Tintoret*, *Leader*, *Commander*, *Oliver*, and *Mons. Rendatler*.

The exhibition of fruit was excellent, and quite up to the average. The best collection of fruit, arranged as a dessert for the dinner-table, came from Mr T. Bannerman, gardener to Lord Bagot, and consisted of good dishes of *Black Hamburgh* and *Foster's White Seedling Grapes* (?), two nice *Pines*, two good dishes of *Peaches*, and one of *Nectarines*, the latter being fine in size but pale in colour; a handsome-looking *Melon*, and dishes of *Cherries* and *Strawberries*. Mr Clark, gardener to Earl Cowper, Brompton Hall, was second with a similar collection. The first prize for one *Pine-Apple*, any variety, was adjudged to a handsome *Queen*, weighing 5 lb. 11 oz., from Mr Ward, gardener to T. N. Miller, Esq., Bishop-Stortford; equal second prizes being taken by Mr Bertram, gardener to R. S. Crawshay, Esq., Cyfartha Castle, with a *Providence*, weighing 10 lb., and Mr Penford, gardener to Earl Radnor, Longford Castle; while Mr Grant, gardener to G. Plucknett, Esq., Finchely, came in third with a *Queen*, weighing 4 lb. 7 oz. Twenty *Melons* were shown in competition in the class for green-fleshed varieties, and, as a rule, were much better flavoured than the scarlet-fleshed kinds. The best of the former was a finely-flavoured fruit, named *Colston Basset Seedling*, shown by Mr Lamb, Colston Basset, Bingham; the next best being a large unnamed variety from Mr Cross, gardener to Sir F. Goldsmith, Rendcombe Park, Gloucestershire; Mr J. Douglas, gardener to F. Whitbourn, Esq., Loxford Hall, taking third honours with a good specimen of *Meredith's Hybrid Cashmere*. Weir's *Eclipse*, a medium-sized, moderately thick-fleshed, and good-flavoured *Melon*, from Mr J. Weir, gardener to Mrs Hodgson, The Elms, Hampstead, was first in the scarlet-fleshed class. The best basket of *Grapes*, of not less than 12 lb., came from Mr G. Ward, being *Black Hamburghs*, with good berries, well coloured, and having plenty of bloom; Mr M. Henderson came in second with a smaller-berried lot, but with plenty of colour. Mr M. Henderson was first for the best dish of *Black Grapes*, with medium-sized bunches, very large berries, and

well finished; Mr Miller, Combe Abbey, taking second honours, with fine bunches, smaller in berry than the former, but fine in colour and bloom. A very good dish of Buckland Sweetwater, contributed by Mr A. Reid, gardener to L. Huth, Esq., Passingworth, Essex, was placed first in the class for White Grapes; Mr G. Douglas being second with large, well-grown bunches of the same variety. Of Peaches, 2 dishes, 13 lots were staged, the best being very fine examples of Bellegarde and Royal George, from Mr Jack, gardener to the Duke of Cleveland, Battle Abbey: Mr W. Davies was second with the same varieties; and Mr C. Ross, gardener to C. Eyre, Esq., third, with Violette Hative and Royal George, large, but pale in colour. In addition to the above varieties, shown in other collections, were some fine Grosse Mignonne. Mr Miles, gardener to Lord Carrington, showed the best Nectarines, very fine Elruge, of a beautiful colour; Mr Carmichael, gardener to H.R.H. the Prince of Wales, being second with good examples of Elruge and Violette Hative. Mr Miles was also first for Black and White Cherries, with admirable fruit of Black Circassian and Bigarreau Napoléon. Mr J. Douglas took first honours for 4 and 2 dishes of Strawberries, with well-grown specimens of Frogmore Late Pine, La Constante, Mr Radclyffe, Sir Harry, and British Queen.

CRYSTAL PALACE ROSE-SHOW, June 25.—This was a very fine and extensive show, and notwithstanding the drought, the Roses were superb in quality. C Roses, 72 varieties, distinct, eight most excellent collections were shown, the first prize, after a very close competition, being carried off by Mr B. R. Cant, of Colchester, whose blooms were superbly rich in colour. Amongst his collection the best were Madame Noman, remarkably fine white; Dupuy-Jamin, very rich; Madame Charles Wood, very fine; Alfred Colomb, first-rate; Marie Baumann, very fine; Baronne de Rothschild, large and good; Maréchal Niel, first-rate; and the following, all good blooms:—John Hopper, Madame Caillat, Mrs Rivers, Souvenir d'Elise, Madame Crapelet, and La Rhone. Messrs Paul & Son came in second; Mr J. Cranston, King's Acre, Hereford, third; and Mr J. Keynes, Salisbury, fourth; some really splendid examples being contributed in their collections. Messrs Paul & Son sent the best 48, 3 trusses of each, including besides several of the above-named, remarkably fine specimens of Beauty of Waltham, Mrs George Paul, Charles Rouillard, Comtesse de Chabrilland, Marie Radley, Abel Grand, and Victor Verdier, &c. The other prizes were taken by the following exhibitors, in the order named: Mr Turner, Mr J. Fraser, Lea Bridge, and Mr J. Cranston. In the nurserymen's classes for 24, 3 trusses and 1 truss of each respectively, Mr B. R. Cant again supplied the first prize groups from his Colchester nursery; and it was noticeable that most of his varieties were exceedingly rich in colour, and were as fine in size. His blooms of Edward Morren, Marguèrite de St Amand, Maréchal Niel, Alfred Colomb, Xavier Olibo, Prince Humbert, and Antoine Ducher, were deserving of the highest commendation. Amongst amateurs, the Rev. E. N. Pochin was credited with the greatest number of first prizes, which he took for 36, 24, and 12 respectively, with, amongst others, capitally finished blooms of Maréchal Niel, Madame Clémence Joigneaux, Comtesse de Paris, Alfred Colomb, Louise Peyronny, Madame C. Wood, and Xavier Olibo, &c. The best 48 were a capitally-put-up collection, from Mr Ingle, gardener to Mrs Round, Colchester, comprising Thyra Hammerich, Fisher Holmes, Duc de Rohan, Beauty of Waltham, Duchesse de Caylus, Madame Annie Wood, and Madame Fillion, in the best possible condition. The competition in these classes was very spirited, first-class blooms being the order of the day. The best new Rose of 1868 was Miss Ingram, white, blush centre, shown in excellent con-

dition by Mr Turner; the next best was Dupuy-Jamin, a very bright cerise, a fine variety, shown by Mr B. R. Cant; Messrs Paul & Son came in third with Nardy Frères; and Mr J. Keynes fourth, with Edward Morren. These represent the more salient points of the show, though there were many others equally attractive.

ROYAL HORTICULTURAL SOCIETY'S ROSE-SHOW, June 29.—Here, the Roses were neither so numerous nor so fine as at the Crystal Palace: some hot days intervening, told their tale in a marked manner. Of Roses, the best 72 came from Messrs Paul & Son, comprising grand blooms of Baronne de Rothschild, Madame Furtado, Alfred Colomb, very fine; Sénateur Vaisse, Marquise de Mortemart, Madame Thérèse Levet, Dr Andry, Marie Baumann, Black Prince, Pierre Notting, Prince Camille de Rohan, Leopold Hausburg, and Xavier Olibo, &c. In the second prize collection, staged by Mr J. Cranston—Annie Wood, Alice Dureau, Lord Herbert, Reine du Midi, Françoise Fontaine, Alfred Colomb, Charles Lefevre, Duc de Rohan, Centifolia rosea, and Madame Charles Crapelet, were shown in prime condition. The best 48, 3 trusses of each, also came from Messrs Paul & Son,—magnificently coloured blooms of Prince Camille de Rohan, Madame Rivers, Alfred Colomb, Prince de Portia, Antoine Ducher, Marguerite Dombrain, Camille Bernardin, Marquise de Mortemart, Madame Clémence Joigneaux, &c. The next best lot came from Mr Turner, amongst which Duke of Edinburgh, Alfred Colomb, Jean Lambert, Madame Charles Crapelet, Maréchal Niel, Camille Bernardin, Xavier Olibo, and La Duchesse de Morny, were in very fine order. For 24 Hybrid Perpetual varieties only, 3 trusses of each, Mr J. Cranston was first, with a capital lot, comprising, amongst others, large well-finished blooms of Alfred Colomb, Madame Vidot, Annie Wood, Antoine Ducher, Alfred de Rougemont, Josephine de Beauharnais, and Marie Baumann, &c. Class six was for 24, 1 truss of each, open to nurserymen only; and the first prize was secured by Mr Turner. His best blooms were Maréchal Niel, Alfred Colomb, Miss Ingram, Exposition de Brie, Black Prince, Baronne de Rothschild, Prince Camille de Rohan, and Ten Acres. Mr Keynes came in second, showing large and good blooms of Josephine de Beauharnais, Xavier Olibo, Antoine Ducher, and Madame Charles Wood.

In the amateurs' class for 48, the Rev. E. N. Pochin stood pre-eminently first: his blooms of Charles Lefevre, John Hopper, Maréchal Niel, Dr Andry, Alfred Colomb, Comtesse de Chabrilland, Monsieur Boncenne, Comte Cavour, Fisher Holmes, Duchesse de Caylus, Pierre Notting, Léopold Premier, Comte de Nanteuil, and Triomphe de Caen were really magnificent. Mr W. Ingle, gardener to Mrs Round, Colchester, took the second prize. In class 8, for 36, the Rev. E. N. Pochin again occupied the first position. In this collection were grand blooms of Prince Camille de Rohan, Duc de Wellington, Dr Andry, Victor Verdier, Louise Peyronny, La Duchesse de Morny, Maréchal Niel, Madame MacMahon, Fisher Holmes, Sénateur Vaisse, Comtesse Chabrilland, and the best finished and most refined bloom of Felix Genero in the exhibition. The best 12 new Roses of 1868 or 1869 were sent by Messrs Paul & Son, consisting of Reine Blanche, Edward Morren, Julie Touvais, Duke of Edinburgh, Marquise de Mortemart, Devienne Laing, Mdle. Eugénie Verdier, Perfection de Lyon, Souvenir de Monsieur Poiteau, Nardy Frères, Thyra Hammerich, &c. Mr Turner supplied the next best, his finest blooms being Clémence Raoux and Miss Poole. The best new Rose of 1868 was Duke of Edinburgh, from Messrs Paul & Son; Miss Ingram, from Mr Turner, coming in second. Edward Morren, shown by Messrs Paul & Son, was the best of the new varieties for 1869; Emilie Hausburg, a beautifully-formed Hybrid Perpetual, from Mr J. Fraser, Lea Bridge, was placed second; Mr

Turner was third with Comtesse de Hainault, and Mr Keynes fourth with Edward Morren. Amongst yellow Roses, Maréchal Niel occupied the first position, Messrs Paul & Son and Mr Keynes both exhibiting this variety in fine order.

ROYAL BOTANIC SOCIETY, July 6.—If anything, this show was of a lower degree of quality than its predecessor. The plants were of a somewhat mediocre character; the table decorations helped to redeem the character of the show to some extent.

The show of fruit was a very good one. Four collections, arranged as a dessert, were exhibited; Mr Johnson, gardener to the Marquis of Aylesbury, Savernake, coming in first with excellent examples of Black Hamburg and Tottenham Par Muscat (Muscat of Alexandria) Grapes, the former good in bunch and berry; two very good Queen Pines; fine Bellegarde and Teton de Venus Peaches, the latter being larger and more beautifully coloured than we had before seen it exhibited; Elruge and Violette Hâtive Nectarines, very fine; Golden Perfection and Triomphe de Nice Melons; fine Black Tartarian Cherries, Strawberries, &c. The second-best collection came from Mr Bannerman, gardener to Lord Bagot, Blithfield Hall, Rugeley, who set up first-rate examples of Black Hamburg and Grizzly Frontignan Grapes, with a very fair sample of the new Golden Champion; two Queen Pines, smaller than in the former collection; two specimens of the Tottenham white-fleshed Melon, large, and in shape like a Vegetable Marrow; very good Noblesse and Royal George Peaches, with Strawberries, Cherries, Currants, &c. The best 6 dishes of outdoor fruits were furnished by Mr Gardiner, gardener to E. P. Shirley, Esq., Easington Park, and consisted of Cherries, Currants, Gooseberries, Strawberries, &c., in excellent condition. In the class for one fruit of the Queen Pine-Apple, Mr J. Acres, gardener to J. C. Copestake, Esq., Highgate, came in first with a beautiful specimen, weighing 6 lb.; the next best weighed 4 lb. 10 oz., and showed very fine and regularly-formed pips: this came from Mr R. H. Smith, gardener to H. Walker, Esq., Calderstone, Liverpool. Mr C. Penford, gardener to Earl Radnor, Longford Castle, Wilts, was placed first in the class for any other variety, with a good-shaped Providence weighing about 8 lb.; a longer fruit of the same variety, and the same weight, from Mr Bertram, gardener, Cyfartha Castle, was placed second. Peaches and Nectarines were not shown in nearly such abundance as at the corresponding shows in former years, though, be it said in extenuation, they were all good. Two exceedingly fine dishes of Grosse Mignonne came from Mr Lynn, gardener to Lord Boston, Hedsor, and secured the first prize; the same variety and Royal George, shown in fine condition by Mr Miller, Combe Abbey, being placed second. For the best two dishes of Nectarines Mr Miller stood first and Mr Lynn second, the former with large and well-coloured examples of Oldenburg and Violette Hâtive. Pitmaston Orange, Elruge, and the above, also figured conspicuously in other collections. In the class for two Pine-apples in pots, any kind, the best came from Mr Miles, the second best from Mr R. Laing, gardener to P. W. Flower, Esq., Tooting Common, Queens being the principal variety exhibited. Of Cherries, Mr Miles sent two splendid dishes of Bigarreau Napoleon, and took the first prize in the class for white varieties; whilst Mr J. Pottle, gardener to D. B. Colvin, Esq., Bealings Grove, came in first for black kinds with Black Circassian; Mr Miles being second in the latter class with good specimens of the same variety and May Duke. Only one dish of Plums was shown, and this, a very good one of Orleans from Mr Miles, was considered worthy of the first prize. The same exhibitor also staged the best four dishes of Strawberries, first-rate specimens of Dr Hogg, Admiral Dundas, Mr Radclyffe, and Sir C.

Napier. In the class for scarlet-fleshed Melons, a small fruit of Scarlet Gem, very fine in flavour, contributed by Mr J. Cross, gardener to Sir F. H. Goldsmid, Bart., was placed first; the next best being Meredith's Hybrid Cashmere, exhibited by Mr Burnett; while the third prize was taken by Mr Banting, gardener to Lady Pringle, Bonchurch, Isle of Wight, with Queen Victoria. A small round Melon, named Marquis of Ailsa, shown by Mr T. Crane, was the best in the class for green-fleshed varieties; a medium-sized fruit of Dr Hogg, shown by Mr W. Gardiner, taking second honours. Neither class was at all well represented. For the best 12 lb. of Black Grapes, Mr G. Ward came first, Mr W. Davis second, and Messrs Standish & Co. third; the former with excellent examples of Black Hamburg, and the latter with Royal Ascot, good on all points. In the corresponding class for White Grapes, fair specimens of Muscat of Alexandria were contributed by Mr G. Osborn, Kay's Nursery, Finchley, and Mr W. Davis, New Lodge, Whetstone, the prizes being awarded in the order named. Mr C. Penford, gardener to Earl Radnor, sent the best dish of Black Hamburg, the bunches being large, well-shouldered, and good in berry and colour. Messrs Standish & Co. sent Golden Champion, produced by a last year's graft on the Royal Ascot, which partakes very much of the flavour of that variety.

THE ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—The above society held its summer exhibition on the 13th of last month, in the Music Hall, George Street. This year the exhibition was held later than usual, in order to give it the character of a Rose show, and we cannot help thinking that it was rather a pity to have it and a similar show in Glasgow on the same day.

The general character of the exhibition, as regards plants, fruit, and flowers, was much the same as on previous occasions. The Roses, being in great force, gave it an added interest over other years, and this the public seemed thoroughly to appreciate, for on no previous occasion have we seen so large a gathering of visitors at a midsummer exhibition in Edinburgh. The Roses seemed to have many admirers. This was especially evident in the neighbourhood of the splendid stand of 36 blooms, from Hugh Dickson, Belmont Nursery, Belfast. These were magnificent examples of Rose culture, quite equal to the high standard attained to by the great English growers, and we trust they are a mark at which the Scotch growers will aim against another such exhibition. Amongst his handsome collection, we noted, as extraordinary examples of fine growth, Baroness Rothschild, Horace Vernet, Mdle. Marguerite Dombrain, Abel Grand, Madam Chas. Wood, Senateur Vaisse, Chas. Lefebvre, Mdle. Marie Rady, Anna de Diesbach, and Prince De Porcia. Many of the other stands by both nurserymen and gardeners were fine, though a long way in the rear of that we have specially referred to.

The various Edinburgh nurserymen had their usual stands filled with pretty saleable plants. Amongst those sent by Messrs Lawson & Sons we noted some very pretty variegated shrubs and trees, such as *Acer Japonica variegata*, *Abies Albertina variegata*, *Cupressus Lawsoniana variegata elegantissima*, *Hedera helix variegata*. This very pretty variegated variety of the common wood Ivy is calculated to be very useful as a decorative plant in the flower-garden. They had also the same Ivy in its tree form, that would make beautiful edgings in a flower-garden. The same firm filled the orchestra with palms and other showy plants. Amongst the numerous plants contributed by Mr Methven, we noticed a large collection of cut Roses; and perhaps the most remarkable plant in the room, quite unique in character and appearance—we refer to *Sedum spectabile irregulare variegatum*. This plant stood 29° of frost in the open border last year,

and we predict for it a more extensive cultivation than any plant we know of the same character.

Amongst Dickson & Co.'s collection we noted a number of crosses from the common wild Violas, but none of them as yet at such a stage as to require special notice, though they are probably on the road to it. The same firm showed very pretty bedding Pansy called Celestial, a great improvement on Cliveden Blue, and others like it.

Amongst Messrs Downie, Laird, & Laing's collection we noted a very large bold bedding Pansy of deeper blue than Celestial, and much larger, named Blue Nymph: these are great acquisitions, and their colours are sufficiently dissimilar to make both desirable additions to every collection of bedding-plants.

Mr Paul, nurseryman, Paisley, showed a very promising dark shrubby bedding Calceolaria. Messrs Drummond Brothers, George Street, Mitchell & Arnot, and Dickson & Sons, sent large assortments of pretty plants; and Mr P. Neil Fraser, the Treasurer of the Society, sent as usual a great many pretty Ferns from his extensive collection of these plants.

The sensation in the way of fruit was a seedling Strawberry raised by Messrs Moffat of Fordeldeen, near Dalkeith, named Duke of Edinburgh. It forms enormous coxcomb berries, one of which weighed $2\frac{1}{4}$ oz., many over 2 oz. It also in many instances produces enormous conical berries. It got a first-class certificate on the ground of its great size. In flavour it is slightly superior to the Elton Pine.

We feel that in this brief notice we are omitting much that was well worthy of remark, but we have no alternative, as our space for such purposes is limited.

The members of the Society, to the number of forty, sat down to an excellent dinner in the Albert Hotel, Hanover Street—Mr Thomson of Dalkeith in the chair, and Provost Deans, nurseryman, Jedburgh, croupier; when the usual loyal and patriotic toasts were proposed and responded to.



TO THE EDITOR OF THE 'GARDENER.'

SIR,—In going through the gardens of John Blackwood, Esq., Strathtyrum, near St Andrews, I was very much struck with a figure in the flower-garden filled up with very simple materials—namely, Mangles's Variegated Geraniums pegged down, and Pansy Imperial Blue pegged down amongst it also. I said to Mr Angus, the intelligent gardener there, that I had not seen anything so striking in any flower-garden I had visited this season. Mr Angus replied, it was the bed that caught the eye of every visitor first as they came in; and, as I have said, the material was so simple, I thought it was well worth noticing in the 'Gardener.'

JOHN DOWNIE



NOTES AND QUERIES.

A BEAUTIFUL JAPANESE TREE.—The spring we have scarcely yet escaped from is the most difficult that has been encountered by garden vegetation during the memory of man. We have not had very severe frost, it is true, but the long-continued easterly breezes affected the trees worse than any frosts we have ever

ressed; and, visible as are its effects about London, the season seems even more harmful in places usually more favoured. In the neighbourhood of Dublin along the east coast of Ireland generally, the Conifers and Evergreens seemed, when we saw them a few weeks since, as if they had been thoroughly boiled—such would scarcely describe their state, as the leaves, though dead, held their places on the trees. Such things as *Barberis Darwinii* have succumbed before the shrivelling breeze, and few Evergreens have escaped in any places we have examined; but the deciduous trees hold their own everywhere. The severe season has had no effect on them, except, indeed, that the blossoms of some of the tenderest kinds were slightly injured in the frost of the 4th inst. Among many beautiful deciduous trees we have had the pleasure of seeing in bloom in this country, we were never more struck with any than with the *Pinus Malus arbunda*, which has been brilliantly beautiful for some weeks past, and yet continues in that state. It is difficult to do justice to it in words, but we would advise those who have an opportunity to do so to see it in bloom. The neatest specimen we have seen is in Mr Parker's exotic nursery, Tooting. The tree presents two distinct aspects during the period of its blooming, and which is the most attractive it is not easy to say. The bloom is produced along the branchlets in clusters, the blossoms being as thick as they can stand, each supported on a slender footstalk, about an inch and a half long. The flower-buds are of a vivid crimson lake, and as the footstalks are slender, each of the thousands of flowers hangs down very gracefully, justifying the remark of an enthusiastic gardener, that the buds were "like scarlet Snowdrops." It remains in this stage a considerable time, when the handsome blossoms begin to expand and show their inner parts of pale rose with yellowish stamens, both of these contrasting very pleasingly with the yet unopened buds, the tree seeming ablaze with rose and crimson. If these attractions are presented by young trees 3 to 6 feet high, it is fair to assume that they will be much greater when the trees are matured. We know no object more worthy of a place on lawn or pleasure-ground, isolated or surrounded with other choice shrubs, or in a favoured spot on the margin of a choice abbey. The fruits, which we have not seen, are said to be small, and of a golden yellow, and the plant grows well grafted on the crab or the Paradise apple.—W. R.

OLD-FASHIONED GARDENING.—Time was when kings and conquerors did not disdain the homely occupation of farming and gardening; when philosophy, in the persons of Plato and Epicurus, took up the gentle craft, and made their paradises—for so were gardens called in the olden days—real academies; when the emperors of Rome, with their proverbial magnificence, caused their gardens to rank among the wonders of the world; when, in our own land, princes and prelates loved gardens and gardening; and when Adam's craft—"There are no ancient gentlemen," says the Clown in "Hamlet," "but gardeners, ditchers, and grave-diggers; they hold up Adam's profession"—was pursued with enthusiasm and respect by philosophers, statesmen, and courtiers. Gardening is a direct sign andarrant of civilisation. Without going back to the days of antiquity—when the Persians, the Greeks, and the Romans, borrowing the art from still more primitive people, filled their gardens with aromatic herbs, shady trees, and odorous flowers—we find abundant evidence of a knowledge of gardening among the poorest and lowest in our land.—*The Bookseller*.

THE COMMON BIND-WEED.—I have been much struck with the wonderful wealth of flower this weed has manifested in several parts of the country during the prevalence of the drought. Very pretty, indeed, it has looked, and still does

look—a perfect carpet of gay flowers. Yet it is a tenant of one's garden the owner would like to get quit of as speedily as possible. Where plenty of time cannot be afforded to dig out its roots, the Dutch hoe is the grand remedy; as, if the shoots are kept constantly cut, by the time they grow 3 or 4 inches above the soil, the great milky-white roots will be forced to yield up their life in despair, though if left alone, half an inch of their roots would ere long make the progress of a garden.

Of all weeds this is perhaps one of the worst: in some places it flourishes so well as to overcome all efforts to get rid of it, especially when it is allowed to grow fast and strong ere an attempt be made to dislodge it. The most economical mode of extirpating it is not to trouble greatly with the large white roots when digging, but to have a man on purpose, and tell him whatever else he does a shoot of the Bind-weed is never to be seen more than 3 inches in length. Sometimes, after to all appearance it has been quite got rid off in a certain spot, it will after a few years come back again as vigorous as ever. I remember two cases which came under my own knowledge some years ago. There were two small pieces of ground quite overrun by it. One piece was kept well hoed, and was planted only with some Lettuces, &c., and a shoot of the Bind-weed was never allowed to grow more than a few inches in length. When the ground was dug, there was an abundance of roots in the soil. The other piece was, if anything, worse, and the weed was allowed to have its way until it had carpeted the ground with its twisted wreaths. It was then cut with an old scythe, and the crop burned, and a layer of short grass from the lawn a foot deep was placed in it, and allowed to be there till the autumn. In both of these pieces, when dug up in the autumn, not a root was to be seen. The hoeing, and the cutting and grass-covering, had destroyed the fleshy roots, and for years not a shoot made its appearance. Subsequently some shoots appeared, but they may have found their way there in the dressings applied to the ground. When the Bind-weed infests the garden, the Dutch hoe, used quickly and repeatedly, is the best remedy. Hot short grass laid over the ground long enough will also destroy the roots. Some years ago a lady sent a very fine variety of this climber. The flowers were of the purest white, and very large. It was much admired, but the roots got possession of the soil, and the position in which it was planted makes it very difficult indeed to get rid of it.

The lesser Bind-weed has also bloomed most profusely, especially on the slopes of railway cuttings, and similarly dry and exposed positions. R. S. A.

THE DROUGHT.—The following extract from 'Land and Water' will give our northern readers, who appear to have been blessed with an abundance of rain, some idea of the effect of the drought "down south." Up to this time (July 18) but little rain has fallen in London; the clouds are now to all appearance "big with the blessing of rain," but none falls:—

"Midsummer, 1870.—'The drought,' which nobody recollects the like of but those who remember 1826, still continues at Hereford, and but for two hours' rain last week, here we are in the second week of July still grumbling we have had none, and envying those beyond the Black Mountain, who must have had a soaking to send down the river Wye with a yard of fresh water in it, and even with so short a rise to move up so many salmon that the market price falls to 9d. Our fine grazing meadows still continue as bare as goose commons; our milch-cows look as if they were only just turned out of the winter straw-yard. Bullocks sold at Candlemas fair at £14 each to those who hoped to keep them till October or Christmas, and then 'tumble them over' in value, are again sold

our July fair at £10 each. Horses are quite a drug, and many a useful beast will find he has to take a premature journey to the dog-kennel; and in localities where the small and poor farmer lives, it is pitiable to hear the cattle lowing for food and water. It is but little less sad, too, to see the stalwart labourer going from farm to farm to seek for work, to find no haymaking, no turnip-hoeing, no work to be done. Yet 'drought ne'er brought dearth to Old England' is perfectly true even now. The wheat is splendid, the barley and oats are good, and the hops and fruit were never better; evergreens and forest-trees make the scenery and gardens as beautiful as ever; whilst Roses, flowers, and almost every delicate plant, not excepting the tender stinging nettle, never were more free from blight. Here we may remark upon the absence of insect life this year, and particularly of slugs and worms, to the great complaint of poultry-rearers. The swallows and martins are as scarce this summer as last, the vigorous swift being almost the only representative of this tribe. Not less remarkable is it to see the blackbirds and thrushes resorting to the berries left upon the hollies, just in mid-winter; and who can begrudge them a little garden fruit? All kinds are plentiful, and if genial rain had only come in spring, or in June, perhaps, a more fruitful and abundant year of everything never would have been known. Let us be thankful we are not worse off than we are, and if this drought has indeed extended to all four quarters of the globe, consider how many there are suffering by famine whilst we are blessed with plenty.—I. F. S. (Hereford, *July*, 1870.)"

ANTS' NESTS IN GARDEN PATHS AND BORDERS.—I have found a very effectual remedy for the annoyance of ants nesting in the garden paths and borders. A strong solution of carbolic acid and water poured into the holes kills all the ants it touches, and the survivors immediately take themselves off. Care must be taken in its use, as it destroys animal and vegetable, as well as insect life.—M. G.

STRAWBERRY, DR HOGG (A. R.)—Thanks for the fine examples of this splendid strawberry. We have frequently met with it growing in gardens, and every one speaks of it in the highest terms. We should certainly advise you to make it one of your main crop varieties.

VIDA BLUE PERFECTION (A. B. C., Luton).—The difference between what you term the "two supposed varieties" is an assumed one; there is no difference. Its origin is at present involved in mystery. Though claimed to be a seedling of recent date, it has been found in somewhat obscure districts, where it has been known for several years past. Later in the season it will come very fine indeed.

MUSHROOM-CULTURE OUT-OF-DOORS.—1. Preparation of the manure: It is of vital importance to let the rank steam out. When you get the manure from the stables, throw it into a round heap, and give a good watering with manure-water. Let it lie till the third day, then turn over, and give another shake up. When well sweated, which will be in three days, another turn will be necessary: it will then be ready for use. 2. Making the bed is of secondary importance. Mark out the bed 3 feet wide at bottom, and of course of whatever length you require manure for. Put the dung on in layers of 6 inches the whole length of the bed, and spread out at the rate of four shovelfuls of dry soil to every barrowful of dung; tread down by stamping on it as the work proceeds, until you get the required height; then clap the bed all over with the back of a light spade, drawing the spade downwards at every stroke, to, as it were, seal the bed. Cover up

with a mat immediately, and on no account allow rain to enter. Place one stick in the middle, and one at each end. Feel the heat at least once a day; when found milk-warm, under rather than over, the bed is fit for spawning. 3. Break the spawn into pieces about the size of eggs, taking each piece in the right hand, and with the left lift the material upwards, inserting the spawn at 10 inches apart all over the bed; afterwards give it another beating, making the surface look smooth and smart. 4. This being done, set the line 9 inches from the edge of the bed, and cut the soil down inclining outwards, making a good foundation. To cover the surface of the bed, any kind of soil will do. Mine is light and rich, but just the common garden-stuff. Put $2\frac{1}{2}$ inches on before beating, then sprinkle over with sand to make it work clean; begin at one end, and again beat it well, always drawing the spade downwards as the stroke is delivered, till you get the whole finished. Cover up if in winter—say October—with 5 inches of straw or very dry dung, placed so that the wet cannot get in. It will now have the appearance of the roof of a hay-rick. Put a mat lengthwise over all, and reinsert the sticks, looking at them sometimes to determine whether the bed is getting too hot or over milk-warm; if so, uncover, but put the mat on this time crosswise, to keep out the wet. In this way abundance of mushrooms are grown in the open air.—*Field*.

TWELVE BEST ACHIMENES (Exhibitor).—Ambrose Verschaffelt, Carl Wolfarth, Dazzle, Doctor Hopf, Edmund Boissar, Longiflora major, Mauve Queen, Meteor, Parsonsii, Purpurea elegans, and Sir Treherne Thomas. If the bulbs be placed in heat about March or April, they will start into growth, and can then be potted in 48 or 32-pots, placing six or eight bulbs in a pot. In this way they can be grown on, and will come into bloom so as to succeed the Pelargoniums.

CINERARIAS (Florist).—As soon as rooted, pot off the first-struck cuttings of the named sorts into single pots. These should flower about Christmas. Continue to put in cuttings if a succession of bloom be required, and pot them off as soon as rooted, using a light rich soil. The Cineraria should be grown in boxes or low pits, keeping the plants near the glass till such time as there is danger to be apprehended from frost, when they should be removed into the greenhouse, or into pits, heated with hot water. Seed may still be sown for late blooming. If well saved, it will generally produce fair varieties and showy plants, though not so compact in habit as propagated plants of named kinds, which can also be depended on as regards colour, &c., as seedlings often produce flowers of great sameness.

ADULTERATION OF PICKLES.—Sulphuric acid, in the quantity in which it exists in pickles, is probably not very injurious, though it can scarcely be taken habitually without having some prejudicial effect. Even if it is equally wholesome with acetic acid, it is much less expensive; and, even putting health out of the question, we ought not, when we believe that we are buying pickles preserved in pure malt vinegar, to have a portion of this vinegar replaced by a substance of less value, and which we could buy at a less price; neither ought we to have a substance of this kind thrust upon us as a substitute for the more wholesome and more agreeable malt vinegar.—*Food Journal*.



THE GARDENER.

SEPTEMBER 1870.



THE ROYAL HORTICULTURAL SOCIETY AND PROVINCIAL EXHIBITIONS.



THE Royal Horticultural Society has held another provincial show—in many respects a good one; but there has resulted what some predicted, and many more feared—a pecuniary loss to the Society of something like £300. This year the show was held at Oxford, and, in keeping with custom, at the same time as that of the Royal Agricultural Society of England, but at a considerable distance from it. At Bury St Edmunds, Leicester, and Manchester, the two shows were held almost immediately contiguous to each other; at Oxford they were some miles apart. Everybody seemed to know the whereabouts of the Agricultural meeting, scarcely any one that of the Horticultural. Those who could point out its locality knew a flower-show was being held; of the Royal Horticultural Society they appeared to know about as much as they did of the state of the weather at Timbuctoo. Those who went to Oxford exulting in the prominent position given to Horticulture on that day in that classic region, had a kind of woe-begone aspect when its place of location was reached: there was little, if any, outward symbol to indicate what was within, and placards announcing the locality of the show were as absent as the much-needed showers of rain. True, the two great societies were at Oxford together, but they appeared to have nothing in common, except that each had provided a public entertainment, to which they prayed visitors would come.

It is stated that the Agricultural Society sustained a loss, but that a matter of small moment to that powerful organisation; it is a

result occasionally anticipated, and not dreaded when realised: the large resources of that great Society can bear an occasional strain like that without fear of bankruptcy; and even a financial loss brings with it no diminution of prestige, for next year it will take the field imposingly, and as confident as ever. On the other hand, a financial loss to the Royal Horticultural Society will be certain to result in some loss of prestige also.

We have heretofore advised the Horticultural Society to divest itself from the Agricultural Society when it visits the provinces, and in a contrary direction if need be, so that it stands alone in its appearance. The poetic cobwebs hung round the utterances of those who speak of the societies as "twin sisters," and require that they should "go hand in hand" in consequence of such supposed relationship, are very pretty; but the yoking process appears to have its disagreeable aspects, inasmuch as it has been stated the Royal Agricultural Society cares not for the companionship of its "twin sister." It is like sending two rival maidens hand in hand to seek the good graces of some country swain, and jealousy rather than concord is far more likely to ensue. The fact that at a public reception given by the Corporation of the City of Oxford to the authorities of the Royal Agricultural Society, the Council and leading representatives of the "twin sister" were altogether overlooked, or, if not wholly, at least largely so, has a certain sense of grim humour about it, and may perhaps, even more than the financial loss, tend to bring about that change in the policy of the Council so many of the friends of the Society are desirous of seeing made. To be seriously regarded by the civic authorities on such an occasion as a kind of itinerant prodigy, to be held in temporary veneration, is to our mind what each member of the Council of the Royal Horticultural Society is not only bound to expect, but ought to receive; but when these gentlemen come into competition in this respect with others not more deserving, or more talented, but because of their association with an organisation of apparently much greater importance, and having higher claims to public notice, and which is always the first in the field, why, they may reasonably expect to be elbowed into doorways and such places by their bucolic brethren.

There is every reason to believe that, were the Horticultural Society to go to the provinces alone, there would be no lack of cities and towns willing to receive them; to co-operate with them in many ways by means of a guarantee fund, a local committee, special prizes, &c.; nay more, we further believe that applications would be made to the Society on the part of those places desiring the honour of a visit. The Social Science Congress, the British Association, various religious conferences, &c., all these are eagerly sought for, and why should it not

be the case with the Royal Horticultural Society? The local authorities could give their undivided attention and energies to furthering the interests of their horticultural visitors; the inhabitants would have one instead of two great exhibitions to look through, to the positive injury of one of them; the courtesies of the local government would be sure to be forthcoming; there would be a manifest and most important gain in the way of prestige to the Society; and Horticulture, instead of being overshadowed by the colossal stature and extensive ramifications of a great Agricultural Show held contemporaneously with it, would shine with undimmed lustre, and without a rival near it to cause it any disquiet, or rob it of that dearly-coveted and indispensable appanage, a financial success. R. D.



NOTES OF THE MONTH.

THE Horticultural Congress held at Oxford in connection with the provincial show of the Royal Horticultural Society appears to have been very successful. Some good and interesting papers were read, and a little discussion was indulged in at the termination of one or two of them. The quality of the papers was generally high, the men deputed to read them unexceptionable; they were also varied in character, and full of interest. The one most likely to create discussion is that by Dr Hogg on "Judging Fruits." In order that our readers may have an opportunity of learning Dr Hogg's opinions on this matter, we print his paper in another page. The idea of a horticultural congress is a thoroughly good one, and when judiciously managed, as this appears to have been, may be made productive of certain practical good. Scarcely enough prominence is given to it, and so a somewhat scanty attendance results. On general grounds it would be best that a large tent be erected close by those containing the plants, as a place in which the Congress is to assemble. Placards should be posted about the show-ground announcing the time at which it is intended to hold the meeting, the papers to be read, and the readers thereof: by such means a greater degree of popular interest would be enlisted. At Manchester, and again at Oxford, the Congress appeared—though never intended to assume such an aspect—to be an affair of the few, and not one of the many, no doubt through lack of publicity. On these occasions horticulturists come from distant parts, and there are old friends to meet and new acquaintances to be made, and general fraternal greetings to be exchanged, and the somewhat sparingly-announced Congress gets overlooked. If, another season, the

arrangements of the Congress could be so made beforehand as to admit of their being announced in the schedule of prizes as a part and parcel of the engagements of the Society, a knowledge of them would be much more widely diffused.

The unusual productiveness of the Walnut-trees this season is a matter of frequent remark. Is this fructiferous quality in any way traceable to the drought of the previous two years? A correspondent writes from Northamptonshire: "Never in the memory of man has there been such a crop of Walnuts as there is this year in this neighbourhood; the trees are weighed down with them, and the fact deserves record in your pages. I heard a loud crack the other day, and found a branch of one of my Walnut-trees had broken down with the weight; and I know another instance of a large arm coming down from the same cause. Bunches of six and eight are common on many trees, and I have gathered one of nine, and believe that I could find others still larger. Can any correspondent cap this from their trees? I presume this remarkable crop is owing to the wood being well ripened last year, and to the backward spring of the present year, which retarded the trees till the frosts were over. All fruit is here very abundant."

A French nobleman has just discovered an original manner for forcing Mushrooms—so we learn from the Continent—and by so doing procuring a constant harvest. He places a number of little boxes in his stable, about 3 feet long and 10 inches wide, and arranges them like the shelves of a bookcase, before which a thick curtain slides in order to keep light out. He sows the spawn in a bed composed of horse-dung, or dead leaves and vegetable earth well manured, and the Baron has Mushrooms all the year round. As for the horses, they are none the worse for the forcing, and no unhealthy emanations have been remarked in the stables.

An announcement has just appeared in the columns of the 'Gardener's Magazine' to the effect that the proprietors and editor of that journal offer a prize of twenty guineas for the best "Essay on Irrigation, with especial reference to the Utilisation of Sewage." The following are the conditions of the competition:—

"The essays may be of any length, and may be written on one or both sides of any sized paper; but the adjudicators will give preference to the one which deals with the subject most comprehensively, practically, and briefly; the object being to obtain useful information on the sources of water-supply for farm and garden purposes, and the best means of storing, lifting, and distributing, with a view to economical cultural results. The essays are not in any case to have the names of the writers attached to them, but each essay must be marked with monogram or motto, and be accompanied with a sealed envelope bearing a corresponding monogram or motto, and enclosing the real name and address of the

writer. When the adjudicators have selected what they consider the best essay, the envelopes will be opened, and the unsuccessful manuscripts returned to their owners. The essay to which the prize is awarded is to be the property of the editor of the 'Gardener's Magazine.' The 1st of October will be the latest date on which competing essays can be received. The adjudicators are Mr William Haywood, engineer to the Commissioners of Sewers of the city of London; Mr Alexander M'Kenzie, landscape-gardener, and director of gardening to the Metropolitan Board of Works; and Mr Shirley Hibberd, editor of the 'Gardener's Magazine.'"

The sum was originally stated at ten guineas, but considering the great importance of the subject, and its varied bearings in relation to the drainage of towns, the donors have determined to double the amount.

What constitutes a Nosegay Pelargonium appears to be just now a pertinent question. At the Pelargonium Show at South Kensington on the 3d of August several Nosegay Pelargoniums were staged, but so much like the zonal kinds, both in habit and size and shape of the flowers, that the judges were puzzled, and in one instance submitted a variety to the Floral Committee for their opinion. The large truss, with its profuse succession of pips, is still retained; but the windmill petals, and the somewhat lank habit of growth, have, in what is now termed hybrid nosegays, given place to rounded well-formed flowers of fine substance, allied to close-growing compact habits in the plants. The florist has directed his attention to the production of form in the nosegay varieties, and succeeded to such an extent, by crossing them with finely-formed zonal varieties, as to impress the character of the latter on both flowers and habit; hence the reason for asking, "What constitutes a Nosegay Pelargonium?" Would it not be better to abandon such a purely artificial and arbitrary distinction, and class them all in the general category of green-leaved bedding Pelargoniums?

Messrs Veitch & Son, Exotic Nurseries, Chelsea, have just bloomed a magnificent specimen of *Dendrobium MacCarthiæ*, which had at one time more than 100 expanded flowers! A truly noble sight.

A remarkable hybrid Lily has just been exhibited by Mr George Thomson, The Gardens, Stanstead Park, Emsworth, the result of a cross between *L. auratum* and *L. lancifolium speciosum*. A bloom of it was produced at the meeting of the Royal Horticultural Society on the 3d of August, white in colour, and handsomely spotted with crimson; in build it resembled *L. lancifolium*, but with rather broader petals and a flatter surface, and while richly perfumed, yet not so powerfully as *L. auratum*; the foliage partook more of the character of *L. auratum*. No particulars were furnished as to how and when the cross was effected, and how long a time expired before the seedling plant bloomed.

From the 'Gardeners' Chronicle' we learn that

"A French gardener has adopted a new method of grafting and budding Pear-trees. The wild stocks, he says, succeed best when budded, as their branches then continue to grow as if no operation had been performed; while in the case of grafting, the stock, being cut down to the ground wastes vitality, which the graft is not able to supply for a long time, so that during the first year progress is very slow. In order to remedy this he leaves two shoots on each side of the stock, which he splits half-way down, and then shaving away the sides of the lower end of the scion, he inserts the latter in the cleft and binds up in the usual way. If the operation is performed in the opening spring, you pinch off the shoots in order to prevent the stem from growing too fast, and cut back at the end of the year; if the grafting is performed in the autumn, the cutting is executed at the end of the winter. The graft having then taken well, it has force enough to excite the action of the spongioles, so that much trouble and loss of time are saved. He has a like plan for budding. It is well known that this operation cannot be adopted after the rise of the sap has ceased; he therefore cuts his bud with a small portion of wood attached to it, so that the lower part of the eye is, of course, not only uninjured but supported by the ligneous matter; the budding piece is then inserted, either in a slit in the top of the stock, or into an opening made in the middle of the stock with a knife, and into which the bud, or rather the small piece of wood attached to it, is inserted. The operation may be regarded, in fact, as grafting with a single eye. The grand advantage is that the operation succeeds as well in October or November as in August or September."

Another gap in the horticultural world is created by the death of Mr John Gould Veitch, F.L.S., eldest son of the late Mr James Veitch, of the Royal Exotic Nurseries, Chelsea, who died at his residence, Coombe Wood, Kingston Hill, on the 13th of August, at the early age of thirty-one years and a few months. Keenly devoted to his profession, favoured with an education of no common order, gifted with much energy of character, genial and intelligent, he had before him a future that might have raised to even a higher level of estimation the honoured name of Veitch. Fate willed otherwise, and in the fulness of a promising life he fell a victim to a serious affection of the lungs, that for a few years past had necessitated his retirement during the winter to a warm southerly clime. In the year 1860 he started on a journey of exploration to China, Japan, and the Philippine Isles, and from these he obtained some very valuable new plants and trees, "among which the lovely *Primula cortusoides amœna* would of itself form no mean monument to his memory." In 1864 he visited Australia and the South Sea Islands, returning home in February 1866, bringing with him valuable horticultural treasures. "During this journey, Cape York in Northern Australia was visited, and here was obtained a new Palm, which has since been dedicated to his honour under the name of *Veitchia Johannis*. The 'Gardeners' Chronicle' of August 20th contains a touching tribute to his worth and memory from the pen

of his attached friend Mr Thomas Moore, to which we are indebted for a few of the circumstances herein narrated. *Ingenio stat sine morte locus*—The honours of genius are eternal.



THE ORCHARD-HOUSE AT CHISWICK.

THIS house is just now an object of considerable interest to fruit-cultivators, and its condition demands that a notice of it should be given in this form. It stands like an oasis amid the dismantled and wrecked appearances around it, caused by the recent abandonment of a portion of the ground ; and Mr A. F. Barron, the superintendent of the Chiswick Gardens, deserves much praise for preserving some of the glories of the past of these famed gardens in such a cheering aspect as this house presents.

The house is a light, commodious, and somewhat new erection, about 100 feet in length from north to south by 30 feet in width, the height corresponding to the latter. It is of a broad span form, with a walk 5 feet in width down the centre, and two side-walks running parallel with it, which are continued round the house. On either side of the main walk are broad borders in which the trees are planted out, and round the house is another border 5 feet in width. A series of wooden uprights, placed at intervals along the outside verge of the central borders, serve to support the roof, without in any way giving the interior of the house a heavy appearance, or obstructing the view. The usually monotonous appearance of the interior of many of our large fruit-houses is in this instance admirably neutralised by means of narrow bands of pale-blue paint running in an upward direction on the main supports and rafters of the building : just enough to give the house a light and elegant appearance. Ventilation is provided for in the ridge of the roof, by means of a wooden flat on either side which opens outwards in a raised form not unlike the outspread wings of a bird. This is worked by a simple and easily-managed contrivance, which, without being elaborate and expensive, answers admirably, and is both cheap and good. The outside walls are composed of one-half boarding and one-half glazed lights, and when an abundance of air is required, all or any of these can be opened outwards at the bottom, being fixed by hinges at the top. So much, then, for the structural arrangements of this house.

On the main borders all the trees are planted out. There is a line of standard Peaches and Plums on 6-foot stems, planted along the middle 10 feet apart, the Peaches predominating ; and on either side of these

a line of pyramid Peaches and Nectarines, from 4 to 5 feet in height, planted opposite to each other, and so coming in the angles of the central row of standards. This arrangement is similar on both borders. Next the central walk, and on either side of it, stands a line of Peaches and Nectarines in pots, which rests partly on the border and partly on the walk—nice small pyramid and bush trees in excellent condition. These are placed here temporarily, and when the planted-out trees make more head growth they will have to be furnished with new quarters. The outside border on the west has Peaches, Nectarines, and Plums in pots—nice bush pyramids; on the east side Apricots and Plums of a similar character. At the south end of the house stands two splendid standard Plums in pots on 6-foot stems; at the north end a very fine standard Mulberry with a large head having quite a mass of rich luscious fruit finer in quality than that grown in the open air, and a standard Apricot also, both on 6-foot stems and growing in pots.

There is considerable variety in the sorts of fruits grown, as in the main they are for the purpose of proof and comparison. Good crops of excellent quality are the invariable rule. Of Peaches there are of the earlier kinds Early York, Grosse Mignonne, Bellegarde, and Royal George, as representing the standard early varieties. Of Nectarines, Pitmaston Orange and Hunt's Tawny in fruit now. Of Plums now fit for table, Jefferson's (one of the standards at the north end of the house is this variety, and a peck of fine fruit might be gathered from it, though the tree has been cultivated in pots for the past ten years) Greengage, Standard of England, a beautiful dark-purple Plum—the two standard. Plums in pots at the south end of the house represent this variety. One of the earliest is M'Laughlin's Gage, a beautiful fruit of the character of a large golden Gage of very fine quality; while Coe's Golden Drop, which neither bears as a standard nor ripens well in the open air when so grown, is to be seen here in fine condition. The principal variety of Apricot is Moor Park.

Against each rafter on either side of the house a Vine has been planted on the border inside; and as there are ten rafters on either side, there are thus twenty Vines. These are planted as much to give the interior of the roof of the house a furnished and elegant inner roofing, and so supply a green garniture overhead, and take off from the otherwise prominent obliqueness of appearance the unfurnished roof would possess. On no account will these Vines be so suffered to make growth as that they should shade the trees; a single rod will be allowed to each rafter, bearing tempting fruit. Black Hamburg, Black Prince, and other hardy sorts are so planted—varieties that will ripen in a cool house. Against the two rows of uprights, also, pot-Vines

re planted, but for temporary rather than for permanent effect. Nevertheless they aid in imparting a furnished appearance to the house. The pot-plants round the sides of the house simply stand on the border, and are not planted out as in the case of the central beds.

The soil of these central beds is as hard as it is possible to make it, and is kept thoroughly saturated with water as the trees make growth. The border is something like 30 inches in depth, and one-half of this is formed of lime-rubbish and chalk for a free drainage—the remainder with a good suitable soil. The trees round the side borders have their pots plunged in leaves during the winter, which is an excellent check on evaporation, and this remains till the fruit ripens. If it be objected that it has a “littery” appearance, Mr Barron has well demonstrated how snug and orderly it can be kept with a very little attention.

The trees in pots are repeatedly top-dressed with rotten manure, loam, and burnt ashes, which, raised up about an inch round the rim of the pot, gives a kind of shallow basin. There is no stint of water when it is requisite to be applied, and once or twice a-week some manure-water is given. The trees are syringed twice a-day—at morning and at evening—and are kept clean by the occasional use of Doolley's tobacco-powder, applied with a small dredger, and dusted over the shoots when wet. The shoots are kept pinched in very closely.

Some of the trees have been in pots for a space of ten years. During the winter the roots are examined, and those requiring more room are transferred to bigger pots; those not requiring a shift have some of the soil shaken from the roots if it be sour, and are repotted. The biggest trees were only in pots 16 inches in diameter. There is no doubt about it, judging from what can be seen here, that fruit as tender in the flesh, and as nicely flavoured as possible, can be obtained from plants grown in pots in this fashion, if the trees are not allowed to carry a heavy but simply a reasonable crop.

R. D.



HINTS FOR AMATEURS.—SEPTEMBER.

WHEN so many crops at this season are likely to be past use, the vegetable garden is liable to become untidy. Peas, Beans, Scarlet Runners, Potatoes, &c., will be turning in for use quickly; and if the ground is not to be cropped again, it should at least be cleaned. Where manure is

scarce, all refuse of vegetables should be carefully harvested for turning into the ground. Earth or other material should be thrown over the heap to prevent an unpleasant smell. Rather than lose vegetable refuse, it might be wheeled on to vacant ground, made into a compact ridge, and covered with the soil till trenching has begun. All winter vegetables, such as Spinach, Turnips, late-sown Lettuce, and Onions, should have timely attention by thinning them to keep the plants clear of each other, or pricking out those requiring it. Cauliflower plants should be in a sheltered position, free from damp. A ridge made to slope to the sun often answers well when no other means are at command. A quantity of late-sown Lettuce we had last season on a ridge stood the winter without losing any, though so small that they could hardly be seen till growth commenced in spring. They were then lifted and planted in well-prepared ground. They grew to a great size and did good service, while others which had better quarters and more attention went prematurely to seed. Cauliflower for an early lot may be placed under handlights on a sheltered border—say nine plants under each light, to be reduced to four or five in spring, when the plants lifted may be planted for a succession. Plants to be placed in a frame may be planted on ground formed to size, and the frame can be placed over when protection is necessary. All such plants should have the lights used only to keep off heavy rains, but kept close during frost and snow. An open healthy surface (by hoeing or otherwise) should be kept as long as possible. Plenty of Cabbage may now be planted. To make the best of the ground they should be placed one foot apart, so that every alternate plant (when fit for use) may be drawn, and the crop left to grow to full size : reducing the number of plants should be done in proportion to the size of kinds and strength of ground. A portion of Celery may now be earthed up for use, first slightly tying the plants together to keep them compact (matting will soon decay, but it is a safe material to prevent cutting the plants as growth proceeds). Place the earth so that the hearts are not buried. A good watering beforehand is of great importance in securing tender crisp Celery. Water can hardly be too freely given to later crops ; and if they are to remain “unearthed up” for a time, a little surfacing after watering will keep in the moisture. Potatoes for seed, after being placed a short time in the sun to “green” them a little, may be kept cool and dry. Onions may be pulled and harvested in cool dry quarters, first drying them well in the sun for a few days : if they are left late out exposed to wet they are liable to take second growth, and will not keep any length of time. All seeds which are to be saved will form strong temptation to birds, unless they are protected with nets, or otherwise looked after. Gather them dry and

vest in cool dry quarters; if placed in close drawers, &c., when np, they will soon become mouldy. There is no profit in saving inary seeds where garden ground is limited; good rare kinds are ays worth the trouble. When weather is unfavourable for outdoor rk, all the seeds which have been left over may be examined, dis- ding those (such as French Beans, &c.) which are useless for next r: a note of them may be taken, which will keep the seed-bill less t season. Brassica seed will keep good for a number of years: use- kinds, however, should be discarded. If Carrots are being attacked h grubs, &c., they may be lifted at once, and covered with sand in ool place: better to lose some by early lifting than have the crop troyed in the ground. On damp heavy ground, earthing up winter ps may be done with advantage, as there is no fear of them being dry. However, in our deeply-trenched rather light ground we lom ever earth anything up. Blanch Endive by tying it up, or ing flower-pots over the plants. Tie up Lettuce if they don't heart l; and all small salads will require attention, now the season is ing late. Golden and American Cress should be plentiful: sow it heltered positions, and it may give a supply all the winter. Radishes r still be tried out of doors, especially in warm southern locali-

Where there are good supplies of French Beans, they may be t on bearing by having hoops bent over them, to be covered with s or other material when there is danger from frost. Plantations Strawberries may now be made, well watering them if weather is : all that are intended to bear fruit next season should be kept free a runners and weeds, saving the healthy leaves. The roots should be disturbed, especially on weakly growers—though we may mention we have seen old gardeners who practise heavy draining and deep ing between their Strawberries in winter very successful in produc- fine fruit, probably the extra manuring making up in a measure for destruction of roots. We never have advocated this system, but er kept the roots entire. One season we had a number of Keen's lling which grew to a great size, and smothered many of the ers when they opened. In the following autumn every plant was round their collars with a spade, cutting the roots unmercifully: result was a finer crop on that sort than we ever had before. ver, we never recommend root-cutting for any fruits unless the le energies of the plant are making growth of foliage or wood, and fruit. Root-pruning may be practised on gross fruit-trees which o no fruit on them: by doing it early, new roots get hold of the a soil before winter, but partial root-pruning is the safest method oing it. Cutting one side this season and the other the next will ually bring the tree into a healthy bearing state, without giving a

severe check. Where fruit is of any value on rank trees, and not ripe, root-pruning may be left undone till the crops are gathered. Next month is generally considered the proper time for planting young trees, and if time can be spared to get ground ready, and soil suitable, it will be of great advantage. If trees are to be selected in the nursery, the sooner the choice is made the better.

Wasps are unusually plentiful this year: every means will be required to save the fruit. Bottles with a little beer and sugar attract them. Tiffany or hexagon netting may be used. In absence of protection, the fruit may be gathered when it begins to ripen—it is seldom attacked before that time. If placed in a dry airy position it will ripen in fair condition. This is applicable chiefly to stone fruit, such as Plums, Peaches, Apricots, &c. Blackbirds and thrushes soon devour Pears, such as Jargonelle, Crawford, Bon Chrétien, and other early sorts.

Fruits too thickly left on the trees to ripen may be helped by beginning early to thin them for culinary purposes. Heavy crops of badly-matured fruit are by no means creditable to any one, besides being false economy. Apples and Pears are generally fit to gather when the seeds turn dark. They should be placed in cool quarters for a time, with plenty of air passing among them: then they may be kept close and dark. Fruit-rooms and other places for storing fruit should be made thoroughly clean, and all parts where mice or other vermin can get in should be stopped up. Fumigating thoroughly with sulphur is a good practice to keep insects, &c., from taking up their quarters in fruit-rooms during winter.

Auriculas in pots may now be placed in their winter-quarters—They will not require to be often watered, and the lights of structures kept off except in times of wet, and abundance of fresh air, free from damp, is life to them. Any valuable plants in borders will now require protection if they will not stand frost. Cuttings of all bedding plants should have attention now. If a good stock is not already in, they should be taken off at once. Calceolarias, however, need not be put in yet—when they are early, they do not stand drought so well the following season. It is well to have them young and growing in spring, instead of coming into flower; as when they bloom early, they are seldom of much service in autumn. This is also applicable to Pansies—some we had very late are now blooming in fine condition, and no water can be afforded for them. Dahlias may have soil drawn over their roots if there is any danger of severe frost: this is often necessary where soil is heavy and wet. Keep all dead flowers off the plants, which will add much to their beauty. Chrysanthemums may now be potted where they have been growing in the open ground:

keep them in the shade, and well water them for a few days : stake them out neatly, if necessary, and place them under protection, giving plenty of light and air : after they have taken hold of the fresh soil, weak liquid-manure may be given frequently. Pelargoniums and other plants should not be exposed to cold rains, but kept airy, with plenty of light. Bulbs for potting may be bought as soon as they can be had. Hyacinths, Narcissus, Tulips, and Jonquils are general favourites, and by potting them early, and forcing some of them, plenty of flowers can be had from Christmas till April. The Early Roman Hyacinth can be had in flower as early as November, and by potting five or seven in each pot, they make a fine display. Good loam mixed with a little rotten manure and sand answers well for most kinds of bulbs : a little of the richest stuff may be placed over the drainage, and when the roots have reached it, they will make vigorous growth. A good system is to leave plenty of room for top-dressing on the surfaces of pots. When potting, the bulbs may have a little clean sand at the base of each, leaving a third or more of the bulb out of the soil : after they are potted, place them together, and cover all over with 6 inches or so of old tan, leaf-mould, or coal-ashes, and in five or six weeks growth will be commenced, when they should be removed to where they can have light and air, and be protected. Make cuttings of Roses : when taken short jointed, with a heel to each, they strike root readily. Tulips may be planted in borders, allowing fresh healthy soil : by choosing suitable colours a fine display can be made. Housing of plants to be protected in winter will now require attention, and water them in the morning.

M. T.



THE CULTIVATION OF HARDY FRUITS.

(Continued from page 353.)

THE PEACH AND NECTARINE.

FOR various reasons I intend to treat of these together. Although we are apt to speak of them as if they were two distincts fruits, it is nevertheless a fact that they are both the product of one parent, and as a consequence of this, they require the same management, are subject to the same diseases, and are identical in constitution, habit of growth, &c. It has long ago been proved that Peaches may be produced from the stones of Nectarines, and Nectarines from the stones of Peaches, thereby showing the intimate relationship existing between the two. I therefore feel justified in linking them together, and the following remarks are to be understood as having reference to both.

New varieties of the Peach and Nectarine are raised from seed. The first matter of importance is the parents from which the seedlings are to be procured. These should be selected with care, and impregnated by the hand, so that the cultivator may have a good idea of what should be the results of his labours. Care should be exercised to prevent impregnation from any other quarter than that desired, and for this purpose the means should be adopted to prevent this which I have before recommended. I would suggest that the fruits selected for seed get full justice during the growing season, being thoroughly exposed to light and air, so that they may be well matured and sound. If these things are attended to, the results are likely to prove more satisfactory than if stones are selected at random. When the fruit is thoroughly ripened the stones should be removed and washed clean, after which they may be buried in layers either in the soil of the garden at the depth of a few inches or in boxes of sand, and kept in a cool dry place until spring. In March the stones may be broken, taking care not to hurt the seed, which is in the form of a kernel. The kernels may be sown in rows about 1 inch deep in good yellow loamy soil, at or near the bottom of a wall having a southern exposure. In this position they will probably make good strong growths of 2 to 3 feet during the summer. The best way to save time and prove the qualities of the seedlings is to take a bud from this maiden shoot, if proper buds can be obtained, on an old and established tree. By this means the bud upon the tree will make a fruit-bearing shoot the following summer, and produce fruit the succeeding autumn to that, so that by the time the young seedling is two and a-half years of age the cultivator is in a position to know whether it is worth while retaining as a new variety or not.

When the propagation of existing varieties is only aimed at, the best and surest method is by budding. Grafting is sometimes performed with wonderful success, but, everything considered, I prefer budding. For this purpose stocks have to be raised. The Pear-Plum stock is the one most in demand, and is always used for the finest varieties of the Peach and Nectarine. The Mussel Plum is also a good stock, and pretty extensively used; and where dwarf trees are in request, the Mirabelle Plum is used. Besides these, some cultivators use such as the following as stocks for Peaches and Nectarines—viz., the Brompton, the Apricot, and the Almond. In France the Almond is believed to induce a shorter-jointed and less luxuriant habit of growth, and for this reason many growers work upon it. When the Plum is used as a stock in France, the varieties selected are generally St. Julien, the Damas Noir, and Myrobolan. The Almond suits best,

it is said, on sandy, shallow, or chalky soil, while the Plum is said to be the best suited for heavy clayey soils.

As already stated, I prefer budding as the best and easiest means of propagating existing varieties. Any of the many methods in general practice among horticulturists will be found to suit very well, as in all cases I prefer the easiest and simplest modes, so long as the results are satisfactory. In the propagation of the Peach and Nectarine I prefer that style of budding which is known as shield or T budding. In former papers I have fully explained how this operation is performed, so the reader can easily refer to them for details.

The time for budding the Peach varies according to circumstances. The best rule to observe is, that the stock and bud are both ready as soon as the bark parts freely from the wood. From the middle of July to the middle of August this will, generally speaking, be the case—in England during the former month, and in Scotland the end of the former or early part of the latter month. In the selection of buds, care must be exercised so as to use nothing but wood-buds, for should flower-buds be taken, certain failure will be the result. Practical experience alone will teach the cultivator the difference between the two, so that he will be able to go about his work with confidence. I may say, however, that the wood-bud is sharp, slender, and pointed, while the flower-bud is plump, full, and round. By attending to the above rule, the novice may attempt the operation of budding the Peach and Nectarine, and find his labours crowned with a considerable amount of success. The great secret of either budding or grafting is in having at least one edge of the bark of the scion or bud fitting exactly into the bark of the stock, so that the sap in passing upwards may pass directly into the bud, there to become elaborated, after which it will fully cement the union between itself and the stock. Budding may be performed after the periods I have specified under certain conditions. It is a well-known fact, that while the bark of a tree will not rise from the wood until a certain period of the year, so it is also as well known that after a certain time it again refuses to rise. After the periods specified above such will be the case, but should it have occurred from unforeseen circumstances—from want of time or any other cause that might present itself—the operation may be performed with success in the following manner: in taking off the bud, a thin slice of wood should be allowed to adhere, which should be cut as thin as possible, and quite flat and smooth. After this the bud is inserted into its position, care being taken that the inner bark shall be in close contact with the cambium of the stock, without which no union can take place. The height at which the bud should be inserted will be determined according to the sort of tree that is required. Dwarf trees should have the bud inserted at not a greater

height than 12 inches from the ground, while riders may have their buds as high as from 3 to 5 feet from the root. The following spring these buds will start into active growth, and if not pinched will make shoots 3 or 4 feet in length. Some cultivators make a practice of pinching the young shoot when 6 or 7 inches in height, in order to induce it to form a young fan-tree the first year. This they no doubt accomplish, but it is very doubtful whether much is gained by the practice or not. My own opinion is that a better and healthier tree is to be obtained by allowing the bud to grow at freedom during the first season, and at the pruning time in winter cut it back to 6 or 7 inches to form the young tree. Where the shoot is cut back in spring to the height I indicated, the lateral growths which are formed are invariably long-jointed and watery, and seldom ripen so thoroughly as is absolutely necessary for the Peach and Nectarine. Such being the case, there can be little doubt but that the year gained at first is not a year gained in the end, but rather the reverse; and for this reason I would not recommend the practice, but would rather induce a good and well-ripened growth to be made during the first season, believing as I do that the future health and wellbeing of any sort of tree depend almost entirely upon the constitution that is induced during the first year or two of its life.

Some cultivators have adopted grafting with considerable success. For this purpose firm short-jointed wood is selected, with a small portion of two-year-old wood attached. These should be taken off when the tree is thoroughly at rest, and put in by the heels in some sheltered corner until the grafting season comes round. Any of the many modes of grafting may be adopted, but whip-grafting I prefer. In the third volume of the 'Gardener's Magazine,' p. 149, Mr Cameron of Highbeach, Essex, gives an account of how he performs this operation, and from its simplicity and novelty I reproduce it here. He says: "Sow in autumn kernels of Peaches, Nectarines, or Apricots, under the walls where they are to remain. They will make a vigorous shoot the following spring, and may either be budded in August of the same year, or grafted the March of the year following. Grafting is the mode I prefer, and the scion should have $\frac{1}{4}$ inch of two-year-old wood at its lower extremity; at least, I have found scions so taken off succeed better than those taken indifferently from any part of the young wood. Cut the stock with a dovetail notch for the scion to rest on, and tie it on in the usual manner."

JAMES M'MILLAN.

(To be continued.)

SOMETHING ABOUT JAPAN LILIES.

HAVING in February last received a large collection of Lilies from Japan—sent home by Lieut. Woodroffe of the Royal Navy, where he had been stationed three years—I desire to give some account of my treatment of them. The collection consisted, among others, of 220 bulbs of *L. auratum*. These were potted as soon as they arrived, the largest bulbs in 32-sized pots; the smaller ones, four or five into 24-sized pots. The following mixture of soils was used: about equal quantities of peat and strong loam, and about a sixth part of leaf-mould, with a good portion of silver-sand to keep the soil open: these were well chopped to pieces with the spade and thoroughly mixed together: the pots were well drained with crocks about an inch deep, and then about the same quantity of the roughest of the compost put over them, the bulbs placed about an inch below the rim of the pot, and the soil pressed firmly about them. I then placed them in a cold vinery till they began to grow, and very little water was given till they began to grow freely. They will not be allowed to get dry till they have done flowering, when water will be gradually withheld, and the pots laid on their side to mature the bulbs till potting-time comes round again, which should not be later than November.

The auratums began to bloom the first week in June, and will continue to do so for at least another month; that will make a successive bloom of three months. They vary in size and markings; some are of a much brighter yellow in the centre of each petal than others: the largest flower was about 24 inches in circumference. Four bulbs not larger than a hen's egg gave two and three blooms each. The best bloom I have at present is a deep yellow at the bottom of the petals, shading off to a brown at the margin of the centre of each, with large spots of red.

My experience with this grand Lily had been somewhat limited till this season, as the first auratum I bought a few years ago, after it had flowered the second year, was laid in the pit under the stage in the greenhouse with several of *L. lancifolium*, to rest previous to potting; and to my great annoyance the auratum bulb was eaten by mice, and not one of the other varieties touched by them. It appears to me that species was preferred by the mice on account of the bulb being sweeter to the taste than the others.

Should any of your readers have had any experience of the auratum bedded out, I shall feel very grateful if they will give the result in the pages of the 'Gardener.'

I intend to bed them out myself this autumn, and have selected some twelve varieties for the purpose; and I hope, all being well next summer, to send you some account of how far I succeed with them.

There can be no question about the hardihood of the Lily, as Lieut Woodroffe informed me the winters in Japan are nearly as cold as in England, and that they have plenty of skating there. The *Lance folium*s received with the *auratum*s are not yet in flower. They are potted one bulb in a 24-sized pot, and are now 4 or 5 feet high and have from five to ten blooms on each ; but none are yet expanded probably because of being potted late. There are in the collection some orange-yellow varieties, in the way of *L. aurantiacum*, and *L. Thunbergianum*. Should anything good flower amongst them, a description of them must be given on a future occasion, as from what I have seen of those that have flowered, I consider them more curious than pretty.

I fear the culture of the Japan Lily is not properly understood, as a gentleman in this neighbourhood received a collection from his brother in Japan, but did not succeed in flowering them, in consequence of not growing them in their proper soil ; and others I have known that have bought bulbs of *L. auratum*, and not succeeded well with them. One in particular was astonished when I told him they would not grow in common garden soil. When I examined the soil his bulbs were potted in, I found it did not contain a particle of peat or silver sand.

There is something so beautiful in the Lily tribe—whether it is the modest Lily of the Valley or the common *L. candidum* of the gardens, with their pure white flowers, or the numerous varieties received from Japan—as to deserve a more extended culture.

Who can survey a beautiful Lily without the mind at once reverting to that passage in Scripture—"Consider the Lilies of the field, how they grow ; they toil not, neither do they spin ; and yet I say unto you That even Solomon in all his glory was not arrayed like one of these." And their beautiful flowers, exquisite colouring, and rich markings and in some instances their delicious perfume, deserve that some such immortal saying as this should be the fitting record of their splendid qualities.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



NOTES ON HARDY HERBACEOUS PLANTS.

VIOLACEÆ.

If this natural order presented nothing except the Sweet Violet for our admiration, it would have a very strong claim on the consideration of all lovers of sweet and beautiful flowers. But there are many

other species of Violets which add, by their beauty or fragrance, or both combined, to the floricultural value of the order; and those with a turn for deeper sifting than colour and odour will find in the structural peculiarities that characterise the group and determine its affinities much to interest and admire. *Viola* itself forms the greater bulk of the order, and I am not aware that any of the other genera furnish worthier hardy herbaceous subjects. *Erpetion* is sometimes included in lists of hardy plants, but it is not hardy in the broader sense, although in a few favoured localities in the south and west of England it has survived mild winters; and *Solea*, another offset of *Viola*, though undoubtedly hardy, is of no ornamental value. *Erpetion* may be noticed here because of its great beauty and its usefulness for out-of-doors work in the summer, in any part of the country. *Violas* are all plants of the easiest requirements as regards culture. They thrive best in a good rich gritty loam, but do very well in various kinds of soils. A very important point in the culture of these plants is an abundant supply of moisture during the growing season. They are much better adapted for growing in naturally damp soils than in dry ones, and if a choice can be made, this should be remembered, otherwise ample artificial supplies must be provided. More particular remarks regarding culture will be made, when necessary, under the species, and all that need be noted here in a general way is, that *Violas* may all be increased by means of division and cuttings; and in all cases, where practicable, the latter is the best, because productive of the most vigorous plants; and it is so simple an operation, and requires so few ordinary facilities, that it may be practised everywhere. Cuttings may be taken any time early or late in the summer as they can be got, inserted in sandy soil under a hand-glass in a shady place, and kept close for some time, or until they begin making roots, when a little air may be given by degrees, increasing daily. They are all easily raised from seeds also, and by this means varieties of interest and value are obtained, especially of the more variable species, such as the Pansy. The seeds may be sown in spring in pots in a cold frame, or in a bed or border in a warm spot of the garden, afterwards nursing them on by pricking the seedlings out from the seed-bed into rich soil in a somewhat shady but warm position, where they must be abundantly supplied with moisture.

Erpetion reniforme—*New Holland Violet*.—This beautiful little plant is too tender to be trusted out in our climate in most parts of the country during winter; but it is such an essential gem that it should be included in every collection of any pretensions, where a dry cold frame can be afforded it when it wants protection. I have seen it survive mild winters in the neighbourhood of London; but it was

late in being stirred into growth, and weakly throughout the season, and flowered unsatisfactorily. There is no doubt but that it would be much more comfortable and successful left out in some of the more southern and western parts of England, and the more favoured localities of Ireland; but there is little hope for its safety if left out in Scotland. It has quite the habit and appearance of some of the smaller alpine Violets, extends itself by weak trailing branches rooting as they advance, has small bright-green kidney-shaped leaves, and the flower-stalks only 2 or 3 inches high, bearing the small delicate blue-and-white flowers in moderate profusion and long continuance. It is a charming little pot plant cultivated in the same way as pot alpine plants, and may be used with good effect in light airy greenhouses; but its best use will be found in edging and carpeting small beds in warm positions in the flower-garden. In the north it may not succeed so well in this way as in the south, but in warm terrace-gardens it may succeed in any part of the country; and it is so easily propagated by division and cuttings that it should be tried out of doors everywhere, for though not very striking, it is sure to arrest the attention of all who may pass it who are fond of simple beauty and freshness. In cold localities the plants would be best plunged in their pots instead of planted out. Native of Australia.

Viola calcarata—*Spurred Violet*.—This is a low-growing species with many underground creeping stems, by which it extends itself and forms carpet-like masses of a lively green. The stems are angular, and clothed with acutely egg-shaped leaves toothed on the margin. The flowers, produced in great profusion, are large, pale purple, and furnished with a conspicuous awl-shaped spur. Adapted to either the rockwork or mixed border, preferring a little shade and ample supplies of moisture during the growing season. The yellow-flowered *V. Zoyssii* of some catalogues is regarded by some botanists as a variety of *calcarata* under the name *V. c. flava*. Flowers from early spring throughout the summer in moist situations. Native of the Alps of Switzerland.

V. cornuta—*Horned Violet*.—This is very near in character to the last, but is a more vigorous plant, and further distinguished by its broader and less deeply toothed leaves, and the more upright tendency of the stems. It is now a well-known plant in flower-gardens, having been extensively tried for some years as a dwarf bedding plant, and most conflicting reports have been made regarding it. When it is successful, there can be but one opinion as to its merits; it is very beautiful, but it is successful as a massing or edging plant only in moist soil and seasons. There are several varieties of greater or less pretensions for being improvements on the normal form, but chiefly marked by different shades of the purplish colour of the original. The

best that has appeared is the one named "Perfection," a very distinct and handsome plant with large Pansy-like flowers of a bright purplish blue, yellow-eyed, and more strongly fragrant than the reputed parent; but it has so little in common with *cornuta*, beyond the *horn*, that there are grounds for questioning the alleged parentage. It is as unlike *cornuta* in its power of resistance of drought as in most other particulars. During this excessively droughty season it has looked fresh and bloomed profusely, while *cornuta* has been "done brown" for weeks. *Cornuta* is a native of the Pyrenees.

V. lutea—*Yellow Mountain Violet*.—This is another unsuccessful candidate for parterre honours of recent introduction. It is a native of mountain pastures in Wales and the north of England and west of Scotland. It grows in rather a straggling manner, rising 3 or 4 inches high, with weak stems and small oblong egg-shaped leaves. The flowers are bright yellow, with a few black lines radiating from the centre on the lower petals. Although it succeeds better in the majority of dry soils and aspects than *V. cornuta*, yet it is not so floriferous as that species, and has disappointed many in the expectations raised regarding its adaptability to summer bedding-out when first introduced for that purpose. It is a pretty little gem, creeping over rockwork, or in the front line of a partially-shaded moist mixed border; but in bright blazing parterres it is eclipsed, and very often burnt up, and does not supply effectively the much-desiderated dwarf bright yellow edging plant. The variety *grandiflora* has, as its name implies, larger flowers than the ordinary form, and is somewhat of an improvement also in the matter of habit being slightly more vigorous. Flowers continuously from May till September.

(To be continued.)



NEW PLANTS OF THE PAST TWO MONTHS.

WITH the passing away of the great shows, comes to some extent a diminution of the number of new plants periodically produced. Still, some good things have put in appearance, and of these, first-class certificates have been awarded to the following: *Bowenia spectabilis*, a remarkably handsome compound-leaved Cycad, from Messrs Veitch & Sons; *Macrozamia magnifica*, a very elegant slender pinnate Cycad from Australia; and *Cycas Broughtoni*, another Australian species in the way of *C. Armstrongii*—both from Mr William Bull; to *Catalpa syringæfolia aurea*, a fine bold golden-leaved tree, which was raised from a seedling on the Continent two or three years ago, from Messrs

Thomas Cripps & Son, Tunbridge Wells ; to *Hydrangea japonica* speciosa, the leaves dark green, with a broad flame of cream-colour along the centre of each, a good addition to this class of ornamental foliaged plants, from Messrs E. G. Henderson & Son ; to *Pteris serrulata* major cristata, a handsome tasselled variety of the tall-growing form of *P. serrulata*, from the Royal Horticultural Society's Garden at Chiswick ; and to *Pteris serrulata* gleicheniifolia, a very beautiful and elegant Fern, from Messrs E. G. Henderson & Son.

Thanks to the persistence of Mr G. F. Wilson, F.R.S., and others some of the most valuable species of the genus Lily are being brought into notice ; it is hoped to be much more extensively grown. The following have received first-class certificates : *L. auratum*, Charles Turner, a large flower, with the golden band replaced by a suffused tint of reddish-brown, from Mr C. Turner ; to the hybrid form of *L. auratum*, obtained by Mr G. Thomson, and alluded to under the head of 'Notes of the Month ;' to *L. Leichtlinii*, yellow spotted with dark brown ; to *L. tigrinum* flore pleno, with several tiers of petals regularly overlaying each other, like the petals of a hexangular Camelia ; and *L. longiflorum*, var. albo-marginatum ;—all from Mr Geo. F. Wilson, F.R.S. : and to *L. Tigrinum* splendens, a fine form of the common Tiger Lily, from Mr W. Bull.

The fine new varieties of hardy Clematises have received good additions in *C. Victoria*, with purplish lilac flowers of fine quality, and said to be remarkably free, from Messrs Thomas Cripps & Son ; and *C. Gemma* a dark mauve-coloured form of *C. lanuginosa*, from Mr Geo. Baker Windlesham. The same award was made to Mr B. S. Williams for *Lælia elegans*, var. gigantea, stated by Mr J. Bateman to be *Cattleya elegans* ; and to Mr W. Bull for *Curculigo recurvata* variegata, belonging to the natural order Hypoxids.

Mr H. Cannell, Woolwich, received a first class-certificate for *Doubtful Pelargonium* Crown-Prince, a fine deep pink-coloured variety of large size ; Messrs W. Barron & Son a second-class certificate for *Zonal Pelargonium* magnificum, with large but somewhat rough trusses of pale orange-scarlet flowers ; and Messrs E. G. Henderson & Son a first-class certificate for a finely-coloured golden-edged Variegated Zonal, named The Rev. E. R. Benyon. The following Verbenas have received the same award : John Laing, pale rosy carmine, rich crimson centre, very fine pip and truss ; Perfection, soft lilac pink, very pretty and good quality ; Mrs George Prince, pale pink, with orange-red centre, fine pip and bold truss ; and Mrs Boulton, white, with claret crimson eye, fine pip and truss—all from Mr C. J. Perry ; also Mrs Dodd, pale pink, with rosy-violet centre, very fine pip and truss ; and Grand Monarque, orange-red, shaded centre, a very fine hue of

colour, from Mr H. Eckford. The same award to Picotee Ne plus ultra, a heavy rose-edged flower with a very fine petal, smooth and pure, from Mr J. Payne, St Paul's, Oxford; to Tropæolum Minnie Warren, a compact-growing form, the leaves green, edged with cream, and appearing as if it would prove useful as a bedding-plant, from Mr John Cattell, Westerham; to Dahlia Marchioness of Bath, pale ground, tipped with rose, a very finely-formed flower, from Mr George Wheeler, Varminster; to Hollyhock Rose Queen, colour clear rose, from Mr Porter, Isleworth: to Dahlias Incomparable and Flora Wyatt, from Mr John Keynes, second-class certificates were awarded. Lastly, a first-class certificate was awarded to Godetia (Enothera) Whitneyi, having bright lilac flowers, with a spot of red on each petal; stout dwarf habit of growth, and very free blooming—a capital addition to our dwarf-growing hardy annuals, sent by Mr William Thompson, Ipswich.

R. D.



GARDEN RECORDS.

NO. IX.

GUNNERSBY PARK, ACTON, MIDDLESEX, THE RESIDENCE OF
BARON LIONEL DE ROTHSCHILD, M.P.

(Continued from page 368.)

THIS place is situated in the south-west side of London, and about midway between Ealing and Kew, though comprehended in the parish of Ealing, and can be readily reached by railway to Ealing, Acton, Turnham Green, and Kew. It has acquired a high reputation as a place for the production of first-class fruits, and from it are drawn the large supplies of fruit, flowers, vegetables, &c., to meet the requirements of the Baron's palatial mansion in Piccadilly, as well as those of other members of the family.

The present area of the park and grounds is some 100 acres, but recently a further space of 140 acres has been enclosed on the Ealing and Brentford sides of the desmène, for the purpose of extending the park. When this is laid out and planted, it will give it what it has hitherto much needed, surroundings in keeping with the mansion, and the splendid liberality with which the estate is maintained. The kitchen-garden is about 14 acres in extent, 5 acres of which are wholly within walls; a wall running from east to west, however, bounds a space of some 9 acres. There is a great extent of glass, and there are also two flower-gardens, besides many supplementary beds; also two pieces of ornamental water, from the middle of the largest of which rises a jet capable of reaching a height of some 60 feet. The mansion occupies the highest part of the grounds on its eastern boundary, and is effectually screened by belts of fine trees, some noble Cedars of Lebanon, &c. The quiet and repose pervading the place, although so near to London proper, and its encircling associations of country and rural life, constitute it a most charming and pleasant place of residence during the summer months.

The gardens and grounds have been under the management of the present gardener, Mr William Forsyth, for the space of twenty years. Incapacitated by physical infirmity—though yet in the prime of life—from actively superintending the duties belonging to a place so well maintained, Mr Forsyth is just on the point of retiring from the service of Baron Rothschild, whose munificent liberality has made abundant provision for him for the remainder of his life. Into comparative retirement Mr Forsyth will carry with him the regrets and best wishes of many attached friends and brother horticulturists.

An inspection of the glass structures gave some eight vineries; the late house a fine span-roofed building, 62 feet in length by 42 feet in width. This is mainly planted with Black Hamburgs on the restriction system, with here and there a row of the Golden Hamburg. This Grape Mr Forsyth regards as a finely-flavoured Sweet Water, but it must be eaten as soon as ripe, as it will not keep; therefore it is practically useless as a late variety. A range of four old lean-to vineries is now to be removed, and a new range now in course of construction substituted. This will be 150 feet in length by 26 feet in width, with a broad walk at back 6 feet in width; the communication between each house by folding-doors. The roof of the new range will take a half-span form. A simple contrivance will raise the top sashes simultaneously at both sides, so as to ventilate the house when necessary. Four years ago this range was thoroughly planted with young Canes, and so concurrently with the new houses will be good crops of fruit. One vinery was entirely filled with Lady Downes, and one with Muscats. All the vine-borders are constructed on the aerated principle.

Gunnersby is well known for the fine quality of the Pines grown there, and as a cultivator Mr Forsyth has made a good reputation. Here, then, can be seen plenty of succession pits, and two capital fruiting-houses, each 33 feet in length by 16 feet in width. It is not too much to state that Pine-Apples are cut all the year round at Gunnersby, but a supply during the London season—*i.e.*, from the first week in February to the end of August—is particularly studied, and there is never a lack of fruits through that time. All the Pines are planted out, suckers and all, and not a single one is cultivated in a pot. A good number of Queens are grown, also smooth and prickly-leaved Cayennes, Black Jamaica, and Charlotte Rothschild; of the latter variety Mr Forsyth has exhibited, before the Royal Horticultural Society, some fruits 9 pounds in weight. The Pines are grown in a soil composed of two-thirds good rough peat and one-third loam; and when the fruits are swelling some manure-water is given, but not so frequently as some cultivators administer it. In order to keep up such a constant succession as is here required, Mr Forsyth finds the oftener the suckers are planted the better; and so, as soon as they are sufficiently large to admit of their being planted out, it is done.

The forcing of Strawberries is a great feature at Gunnersby, and the average quantity of pots cultivated in a season is about 6000. Already Mr Forsyth has some 5600 fine plants well established in pots. For early forcing he depends mainly on Keen's Seedling, and to succeed this, Empress Eugenie, British Queen, and a few other varieties for later work. The White Bicton is much appreciated, and about a thousand plants of that variety are forced annually. To succeed these there are about 1½ acres of Strawberries out of doors of similar kinds to those mentioned. Dr Hogg promises well for next year's fruiting. Ripe fruit is always gathered by the first week in March, and sometimes in February.

A prime feature is the Fig-house, or rather a series of three succession-houses in one length of nearly, or quite, 200 feet. The first crop is commenced in March, and the successive crops last up till the autumn. The principal varieties

grown are the Brown Turkey and the White Marseilles. There are other varieties, but they are not so much relied on as these. This house, in the early part of the summer especially, is a great treat to the visitors at Gunnersby.

The Peach-wall is 140 yards in length, and is covered with a lean-to range of glass 10 feet in height at the back by 5 in width. Here a gathering is always made by the last week in May or the first week in June. The leading Peaches are Grosse Mignonne, Bellegarde, Violet Hative, and others; of Nectarines, Elruge, Roman, and Violette Hative. Enormous crops of fine fruit have been the order this season.

There are two nice Cucumber-houses, one for summer and one for winter work, and from these fruit can be cut each day in the year. For winter work, a good variety, known as Volunteer, is a great favourite. Melons are not largely grown, as this fruit is not very highly esteemed on the Baron's table. The new Burghley Park green flesh appears to be a good variety.

The kitchen-garden is in keeping in all its general features with such a place. The Plum wall is a fine feature, and includes a good number of varieties; the leading kinds are Green Gage, Golden Drop, and Jeffersons. Pear-trees can be seen in great numbers, trained in the pyramidal form, but with the branches brought down in a pendant form, as is common in some of the French gardens. The large collection comprises all the leading kinds, and some three years ago Mr Forsyth cut down something like 200 fine old standard Hazel Pear trees, and grafted on them the best sorts obtainable at the Royal Horticultural Gardens at Chiswick; so there will be no lack of Pears by-and-by.

Varied collections of plants are grown at Gunnersby, and there are several houses for their cultivation; but they are used for furnishing the residence here and the London mansions. Exceptions to this are seen in a small but very choice collection of Orchids in excellent health—a house of stove and handsome foliaged plants, and two span-roofed houses for the same. Among the latter are many kinds of Coleus, especially of the golden-leaved varieties, which prove of great value for furnishing purposes. There is a span-roofed house for the culture of Pelargoniums; and there is another house of similar construction divided by a partition into two parts; the roof of one of these is entirely covered by a fine plant of *Stephanotis floribunda*, which produces a vast number of flowers. On the 16th of June last Mr Forsyth sent to the Baron's residence in Piccadilly 200 trusses of blooms, and vast numbers are cut during the blooming time. In the other division *Lapagerias* were planted out; a fine plant of the red variety was in full bloom, and the beautiful white variety was rapidly opening its flowers. They are both planted out in pit-beds 6 feet in length, in a soil composed of rough peat mixed with charcoal, and plenty of drainage underneath. They have an abundance of water, but the nature of the soil, and the drainage beneath, causes it to pass away from the roots very freely. There is also grown here a very fine collection of Azaleas for house-decoration in London, and the supply of cut flowers for the same purpose is something enormous. Every morning a cart is despatched to London with plants, vegetables, flowers, and fruit.

The flower-gardens and pleasure-grounds are charming in the extreme; and the former are so disposed that only glimpses of them can be gained from the front terrace of the house. The grounds are finely wooded; magnificent Elms tower up aloft with the growth of many years in their majestic proportions. Horns, Sycamores, and Beech bear them company, and some grand Cedars of Lebanon spread out enormous spreading branches from colossal trunks; and underneath the Cedars and other trees are verdant carpets of evergreen Ivy. Dotted about are fine specimen coniferous plants, Magnolias, and other trees,

more or less valuable for their flowers or foliage. Lighting up borders of Rhododendrons, or lending a radiance to the sombre hues of huge clumps of shrubbery, can be seen vigorous-growing heads of *Acer negundo variegata*; and with these are also used other ornamental-foliaged plants to aid the production of similar results. The greensward is most deliciously verdant; all the summer through it has been kept watered by a long tube composed of iron and leather, and running on wheels; portions of the tube are finely punctured with holes, and a stream of water forced into the tube at a high rate of pressure "distils a gentle rain" over a considerable portion of turf surface. It plays in one position for about twenty minutes, and then is removed to another part of the lawn. A man can work it and fill up his time about the flower-beds.

One of the flower-gardens gives lines of basket-beds, with a wire-fencing round the margin, and handles also, over which climbing Roses, &c., were growing. Decided colours are sparingly used; neutral and soft tints, with plenty of foliaged plants, are employed, and a charming effect results. All the beds have an outer margin of some foliaged plant, such as *Cineraria maritima*, *Stachys lanata*, *Pyrethrum Golden Feather*, &c. Some beds of a dark-coloured *Heliotrope* were very fine and somewhat unusual, as the *Heliotrope* is somewhat sparingly used as a bedding-plant now. A mass of *Coleus Verschaffeltii*, edged with a silvery-leaved plant, was very fine indeed. Dotted about the ground, mostly under the shade of tall trees, or filling up open spaces, were fine beds of *Cannas*, *Castor-Oil* plants, and suchlike, with suitable edgings. Some mixed sub-tropical beds, having *Abutilon Thompsoni*, *Dracæna terminalis*, and other foliaged plants, plentifully mingled with *Lilium auratum* and similar rare flowering-plants, were very fine indeed, and a pleasant study, so many different kinds of plants being used in their composition. Another flower-garden on the north-west side of the house gave a huge circular bed filled with *Stella nosegay Pelargonium*; round this was a broad gravel walk, and then a circular line of small round beds, each planted with *Mrs Pollock*, and banded together by means of a low archway of *Convolvulus major* trained over from one to the other. Round this circular line was another of beds in the shape of segments of a broad circular band, edged with box, each of which was filled with *Christine Pelargonium*; and all encircled with a series of iron archways over which were trained climbing and pillar *Roses*. Round the large piece of ornamental water are clumps of fine trees and banks of *Rhododendrons*, and at intervals fine plants of the *Pampas Grass* in threes, that are grand objects in autumn, when the waving silvery spikes are reflected in the shining waters beneath. Huge clumps of *Arundo conspicua* were very fine also, some of the plants having many heads of the peculiar silvery inflorescence it produces.

The front of the mansion has a broad terrace-walk, on which are placed in the summer months *Orange-trees*, *Fuchsias*, &c. From this point there gradually falls away, towards another piece of ornamental water in the distance, one of the most charming sloping banks of turf our eyes have this season been refreshed by, happily without an obtrusive flower-bed to desecrate it. Almost in the middle of this slope stands a trio of majestic *Elms*:—

"Grandeur, strength, and grace
Are here to speak of *THEM*. Not a prince
In all that proud old world beyond the deep
E'er wore his crown as loftily as these
Wear the green coronal of leaves with which
Thy hand has graced them :"

and others of equal imposing proportions screen the dwelling from the noon-

day sun, the scaring tempest, the "swift dark whirlwind," and the keen edge of the northern blasts. It is a lovely spot in the charming grounds of Gunnersby—beautiful, sublime, and peaceful. It is one in which

"To meditate
In these calm shades Thy milder majesty,
And to the beautiful order of Thy works
Learn to conform the order of our lives."



GRAPES AT CHATSWORTH.

A COLLECTION of Grapes exhibited at the recent show of the Royal Horticultural Society at Oxford by Mr Speed, gardener to the Duke of Devonshire, which consisted of three remarkably fine, compact, and well-finished bunches, each of Mill Hill Hamburg, Black Hamburg, and Black Prince, gave occasion for much congratulation among the advocates and adherents of the Extension System in Grape culture. The following information relative to the production of these Grapes has recently been furnished by Mr W. P. Ayres to the 'Gardeners' Chronicle.'

"The Vines have, it appears, been planted about thirty-seven years, and occupy one of the first houses built at Chatsworth upon the ridge-and-furrow system. The border has been well raised above the surrounding soil, and Vines have been growing both inside and outside the house, but in distinct borders. For years, we are informed, the Vines had been failing; the bunches, in the first year of Mr Speed's charge, being disfigured by shanked berries, and some of them shanked altogether. The leaves, though of good size, were flaccid and poor, indicating the presence of too much moisture in the border and atmosphere, and considerable prostration of vital energy. All the Vines were in nearly the same state, the more recently-planted ones, though immensely strong, being soft and withy—so much so that in the leading shoots an ordinary pencil might be inserted down the centre with little or no trouble. The consequence of this immaturity in the wood was the development of long, lean, loose bunches, shanked berries, and deficient colour and quality. The gardens at Chatsworth lie low and damp, considerably lower than the flood-level of the river Derwent, which runs close to it. Consequently Mr Speed knew that the Vines were not likely to suffer from the want of water, but they were more likely to receive injury from the want of heat. To this end he at once arranged the surface of the borders, sloping them so as to afford a ready discharge at the surface for storm water. Where the bottom-heat of the borders had been disconnected it was restored, and through the parching summer of 1868 not a border, inside or outside the vineries, received any water beyond that which fell from the heavens, or an occasional surface sprinkling. The rents in the borders were such as to suggest a copious watering, but Mr Speed's object was the perfect maturation of the wood, and he knew that could only be effected by encouraging short sturdy growth, with clean well-developed foliage and buds. Air, so soon as the foliage was sufficiently hardened, was admitted by a free circulation night and day; and when the fruit was cut, heat was kept on until the leaves at last fell from the Vines from sheer maturation. Under such treatment the practised eye could soon detect that the wood was close-grained and hard as ebony, and hence in a fit state to produce well-formed bunches of finely-coloured fruit. In 1869 the Grapes were much superior to what they had been the preceding year; and this season we should say there can scarcely be a finer series of vineries in the country. Several of the vineries

at Chatsworth are stocked with old Vines, some of them planted, we believe, prior to Sir Joseph Paxton going there. In these, and also in the house to which we have specially referred, there was a confusion of branches; in fact, the leaders were laid in so closely together that it was impossible that the foliage could be properly exposed to the light. These, last winter, were reduced in number, so that now the main branches are 3 to 4 feet apart, giving ample room for lateral extension of the foliage. In the ridge-and-furrow house the inside Vines have been entirely removed, and the advantage of giving the foliage ample room for development is now conspicuously manifest. Shankled Vines are things of the past; each bunch is a compact cube of immense berries, finely hammered and coloured, and with the bloom laid on with an unsparing hand. The 264 bunches which form the crop average 3 lb. each, and some of them weighing double that weight. The kinds are Black Hamburg and Black Prince, and below we give statistics of the crop:—

Name.	Girth 2 ft. from ground. Inches.	Number of rods.	Number of bunches.
Mill Hill Hamburg . .	5	2	27
Black Hamburg . .	7	2	22
Black Prince . .	5½	3	43
Black Hamburg . .	5½	2	28
Black Hamburg . .	4¾	2	33
Black Hamburg . .	5	3	40
Black Hamburg . .	6¼	3	46
Mill Hill Hamburg . .	5½	2	25
			—264

The stems, it will be seen, are not remarkably large, but the girth below where they divide would double, perhaps treble, that of the branches. The average number of bunches is thirty-three, and taking the weight at 3 lb. each, or, for the sake of even numbers, at 100 lb. to each Vine, and the value at 5s. per pound, which they would readily bring, the value of the crop would be £200, and that from Vines which two years ago were condemned to the hatchet and the fire-pile. Nothing can be finer than the bunch which we have received; the berries are in every respect superb, and yet we are assured it was one of the smallest in the house. We regard this as one of the most extraordinary instances of the revivification of plant life which has ever been recorded, and we congratulate Mr Speed upon his well-merited success. Although there are at Chatsworth many houses of young Vines, varying from two to seven years old, not one of them is equal to this house of veterans. The extensionists may well be proud of this success, and those who visit Chatsworth (and we should advise all who have the means to do so) will find that extension is not confined to Vines, but extends to orchard-house trees, upon which may be seen splendid crops of Peaches, Nectarines, Plums, &c., the young shoots free from a single pinch, and many of them 2 to 4 feet long. Mr Speed contends that to have weight of fruit it is indispensable to have breadth of foliage. Not a shoot will be stopped before the middle of August, and then, when the fruit begins to ripen, it will be necessary to do so to admit light and give full flavour."



NOTES ON THE NEWER PEAS.

THERE are a few new or at least reputed new varieties which I have seen growing this season that are well worthy of being recommended. In describing these I will so arrange them as that the order of their bearing shall be observed.

Of the Ringleader type, and as representing the very earliest, one called Caractacus (Waite & Co.) appears to be about the very best. Rather more robust in growth and a better bearer than Ringleader, it has also the advantage of larger and better-filled pods. A comparison between the pods of each gave a larger average of peas in a given number of pods in the case of Caractacus than in those of Ringleader. Advancer (Maclean), a pea now getting pretty well known, is a fine early wrinkled marrow of first-class quality and a great cropper. It grows about 2½ feet, and comes in as quickly as some of the reputed early kinds. Essex Rival (Eley) is a most useful second early pea, growing from 3 to 3½ feet, and cropping heavily. It, however, lacks the fine quality of flavour of the wrinkled varieties. Little Gem (Maclean) is a very dwarf-growing variety, well adapted for forcing or for early work. In height about 12 inches, it can be planted closely, and it crops well. It is a wrinkled marrow of fine flavour. A little taller, a little more robust in growth, and a rather better cropper, yet in other respects exactly like it, is Multum-in-Parvo (Nutting). Either one or the other should be grown in all large establishments. Wonderful (Maclean) is another very useful and prolific Pea, growing about 4 feet, and a wrinkled marrow. As a cottager's Pea it can scarcely be surpassed for general usefulness. Premier (Maclean), Veitch's Perfection, and the Prince (Stuart & Mein), are three fine main-crop peas somewhat similar in character, and give a good succession. Premier is the earliest, and the Prince the latest. Laxton's Alpha, sent out as a new variety for the first time last season, is A 1 in quality, very early—within three or four days of Ringleader; a great cropper and of fine quality. This bids fair to become a standard first early Pea. Laxton's Supreme I am somewhat disappointed with, as it has not proved so early as it was said to be. The pods are very fine, and it is a grand Pea for the exhibition-table. Hundredfold or Cook's Favourite, a round olive-coloured Pea sent out by Messrs Carter & Co. for the first time a short period since, is a wonderful cropper, of fine quality, and a thoroughly good late variety.

The foregoing sorts I have had an opportunity of testing during the past summer, and what I have set down concerning them is, to my mind, a fair estimate of their true characters.

NEMO.

ON JUDGING FRUITS.

A PAPER READ AT THE HORTICULTURAL CONGRESS AT OXFORD, ON JULY 21, 1870.

DR HOGG, after a few preliminary observations, said : Though the judging of fruit has on various occasions occupied the attention of those interested in the subject, and has from time to time been discussed in the public prints by those most competent to deal with it, I am not aware that any common understanding as to the basis on which fruit-judging should rest has yet been arrived at. Notwithstanding this want of a written law on the subject, the practice of judging fruit is followed with results which, though not always agreeable to unsuccessful competitors, are, upon the whole, generally accepted and acceptable.

It is not my intention to submit anything to this meeting which can be regarded in any light as a solution of the question—Upon what principles ought fruit to be judged? This I will leave to be dealt with by those of my audience who are sufficiently versed in the subject, and who feel themselves competent to do so. All that I shall do is to state the motives which actuate me in coming to the conclusion I do when I am acting the part of a fruit judge, leaving others to set up any other code they may think better and more in accordance with their own views.

And first, let me remark that, in judging fruit at exhibitions, I think we ought to do so upon different grounds to those upon which we should judge it at our own tables. We must bear in mind that exhibition fruit is exceptional, and is produced by the greatest effort of the horticultural skill of the exhibitor. It generally receives an amount of attention which he cannot afford to bestow on a general crop, provided his establishment is an extensive one; and we ought, therefore, to regard the exhibition fruit of a gardening establishment very much as we should the exhibition ox—as the exceptional animal on the farm. In judging fruit, therefore, we must look to those points which exhibit the greatest amount of horticultural skill—and the first of these are size and symmetry.

In judging size and symmetry we must deal with each variety on its own merits. It would not be fair, for instance, to judge on the same grounds a bunch of Buckland Sweetwater Grape and one of White Muscat of Alexandria. A bunch of Buckland Sweetwater may be much larger than, and equally as handsome as, one of Muscat of Alexandria, and both may be in every point what gardeners call “well finished;” but the skill required in producing such a bunch of Muscat of Alexandria being much greater than that which is required to grow the Buckland Sweetwater, and the Muscat of Alexandria being a much superior fruit, I would give the preference to the latter, although inferior in size to the former. The same may be said of Black Hamburg and Black Prince shown in the same class, though not on the ground that Black Hamburg requires greater skill in the production of it, but because it is a superior fruit.

It matters not what description of fruit we may be judging; be it Grapes, Pines, Peaches, or any other fruit, size and symmetry are the features which first attract our attention; and therefore to size and symmetry, but not to size apart from symmetry, I attach, perhaps, the greatest importance when other points are not greatly deficient.

The next important feature is colour, requiring much skill in the development of it. This is by some regarded as of even greater importance than size and symmetry. I am rather inclined to give colour second place, except when it is unusually fine, and the difference of size and symmetry between the competing fruit is not great. In such a case I would certainly give the preference to

colour, for I conceive that in such circumstances there is a greater exhibition of horticultural skill in producing the highly-coloured fruit than in producing the larger, because it betokens attention to the maintenance of the just equilibrium between the action of the roots and that of the leaves, and a knowledge as to the crop the plant is capable of producing, without which I conceive no fruit can be well and perfectly coloured. One may feed and force a plant so as to induce it to produce large and showy fruit ; but unless the treatment is so regulated as to preserve the just equilibrium between the root, which serves as the mouth, and the leaves, which perform the functions of digestive organs, there is no guarantee either for high colour or perfect flavour, which generally go together. Still, I say, when fruit has not an objectionally bad colour, and is not deficient in flavour, but has size and symmetry much in advance of another which possesses higher colour and better flavour, but is much inferior in size and symmetry, I would certainly give the award in favour of the larger fruit.

The next point on which I have to touch is flavour ; and here I know there is a great diversity of opinion. Some hold that the beginning and the end of all fruit-culture is flavour ; no matter how large or how small, or however badly coloured, the fruit may be, if flavour is obtained the grower has got all he has ever striven for. Now that is very well when fruit is grown merely for private use—and so long as the palate is satisfied there is no other desire to be gratified ; but we are now discussing the merits of exhibition fruit, into which the whole energy of the cultivator is thrown to develop, not one, but every feature of his production, and the greatest display of cultural skill is to succeed in gratifying the mind as much through the eye as through the palate. It is not to be supposed that I depreciate flavour. On the contrary, I consider it an important point in making awards to exhibition fruit ; but it ought only to come in when the competition is otherwise so close that another point is required to turn the scale.

There is only one exception I would make on the question of flavour, and that is in judging Melons, which, if they have not flavour, have nothing whatever to recommend them. They may be Vegetable Marrows or Pumpkins, or any other vegetable production, if flavour is absent ; and I think experience will testify that if the flavour of a Melon is even but indifferent, then the fruit is not worth eating ; and hence I think all Melons ought to be cut, and judged by flavour only.

In the discussion which ensued on the reading of Dr Hogg's paper, Mr Marshall said that flowers were grown to please the eye, and therefore were judged by the eye ; but fruit being grown to please the palate, he thought that flavour should stand first, as being more requisite, say to the Grape, than either size or colour.

Mr Ayres remarked that it should be the duty of the Society to say that all fruit should be grown for use, and not merely for exhibition ; he would certainly consider flavour as the first requirement.

Major Clarke thought that fruit was produced commonly on two distinct principles, one to obtain fruit for exhibition, and the other to obtain it for dessert. The man who could combine these two principles he should certainly choose for his gardener.



PANSIES.

THE summer of 1870 must have tried the patience of many a Pansy-grower, for such hot dry weather is terribly against this flower, and drives colour, marking, and form, into all kinds of fantastic shapes. Many a flower has this season been condemned as worthless on this account; and I caution all young beginners to suspend judgment until the autumn can give blooms from young plants, or wait until the spring for flowers.

Messrs Downie, Laird, & Laing are now monarchs amongst Pansy-growers, and to that firm we are indebted for a great many grand kinds. My old friend Mr Downie sent me early in the summer a box of Pansy blooms which gave me intense pleasure, they were so very fine. I fear I cannot do them justice, but I give you a copy of my notes taken at the time. Many of them are quite new, some not sent out yet, but all may be relied on as A 1 exhibition flowers, and their catalogue will indicate prices. They were enough to again rouse a florist's smouldering love, and I hope very soon once more to be a Pansy-grower. May I be able to raise a flower that cannot easily be beaten! and when I do, I shall name it John Downie!

FANCY VARIETIES.

Sunrise, William Dean, Pandora.—Three very bright flowers, in which scarlet and yellow are particularly bright and striking. The two latter are evidently seedlings from the former, the colour of all having a resemblance only varying in the markings, with immense bright orange-brown markings. *Sunrise* has a broad margin of solferino. *Pandora* has a rich chocolate-brown shade in it. *W. Dean* has the best form. All three are grand flowers.

Princess is a superb flower; the top petals purple, with an immense blue-violet blotch, bordered with greyish white and violet.

William Forbes.—The top petals light violet, shaded with darker violet and white, with an immense well-defined regular deep-violet blotch, and well-defined creamy-white margin in the lower petals. This is a very refined and superb flower.

Miss Baillie.—Nankeen and canary colour, with large shaded violet and maroon blotch; a very distinct and fine flower.

Fritz Benary.—Top petals pale peach, flushed with white, the lower petals having a superb well-defined solid deep-violet blotch, and distinct well-defined peach and cream-coloured margin. A grand flower of very superior refinement. A 1.

Avoca.—Top petals white bordered with violet, very large shaded violet blotch, having a margin of *Petunia* colour and white. Quite distinct, but the under petal is too small.

Gliffe.—Top petals creamy blush veined with violet, and having an immense solid shaded violet and maroon blotch in lower petals, and distinct margin of creamy white, also a bright yellow eye. Distinct from *Fritz Benary*, though similar in colours, and even superior in form. A very superb flower.

David Thomson.—Rich dark yellow, with an immense well-defined rich brown maroon blotch, fine form, top petals veined with violet. A superb flower.

George Vair.—The top petals light violet, with a wire margin of white, and an

immense rich dark-brownish maroon and violet blotch rayed into a pale-cream margin. Very fine form and a grand flower.

David Syme.—A Sunrise style of flower, but distinct. The top petals are of an orange crimson and peach colour, margined with pale yellow. An intense rich-coloured blotch margined with yellow. Extra fine.

Miss C. Arbutnot.—The top petals white veined with rich blue violet, having an immense blotch of rich blue and violet, and even narrow margin of white. A very rich and distinct flower of great beauty.

SHOW VARIETIES.

Selfs.

Snowdrop.—A white self of great substance and fine form, with well-defined blotch. A decided acquisition.

George Keith.—A rich purple self with a bluish centre. Very fine form and substance.

Cherub.—A splendid yellow of superb form, with a well-defined solid blotch. First class.

Mrs Forbes.—A superb rich dark purple self, with violet-shaded centre; very stout, smooth, and fine form.

White-Ground Flowers.

Bonnie Jean.—Creamy white ground, with rich purple belting, which meets well, forming a fine shield; shoulders high and close, and of good substance. Blotch a trifle too much rayed, but a superb flower.

Lavinia.—Large white shield, with medium belting of pale violet purple; shoulders well, fine form, and smooth. Blotch too small, and not dense enough. Still a very useful old show flower.

Ladyburn Rival.—Rich dark-violet purple belting, and clear white ground; medium-sized dark blotch, smooth, stout, and shoulders well. First-class.

Princess of Wales.—A charming white-ground flower, with medium rich purple belting, which meets so as to form a perfectly-defined shield; a fine solid well-cut blotch, stout, smooth, shoulders high and close, and of first-class form.

Mrs Thornton.—Creamy white ground, with broad margin of rich velvety purple, the blotch dense and well defined in each petal. The belting of the lower petals meeting that of the side petals. Stout and very smooth; a very highly finished and superb flower.

Yellow-ground Flowers.

Adonis.—An exceedingly rich flower of great beauty; deep golden yellow, with rich shaded violet and maroon belting; stout, smooth, shoulders close, and fine form. A 1.

John Downie.—Light-yellow ground with medium light-purple belting, which meets so as to form a bold well-defined shield. Fine solid well-cut blotch, stout, shoulders high and close, and fine form. A first-class flower.

J. C. Champion.—Almost first-rate; deep yellow, with purple and maroon belting. A large bold smooth flower, but the belting of the under petal has a bronzy colour in it; very fine blotch. A useful variety, but a trifle too small.

Robert Burns.—A beautiful flower; deep yellow, with margin of rich violet-purple, and superb large well-cut blotch; smooth, stout, and shoulders high and close. Fine form.

George Muirhead.—Almost perfection; rich yellow, with beautifully-shaded violet and purple margin, and such a blotch; fine form, stout and smooth. A great acquisition; the blotch as perfect as can well be desired.

WILLIAM DEAN.

THE GETTING UP OF ZONAL PELARGONIUMS FOR EXHIBITION.

YEARS ago, when one saw in a schedule of prizes a class for three, or four, or six "Scarlet Geraniums," the intending exhibitor had no difficulty in understanding what was required, for at that time the number of varieties was limited to those having more or less of this shade of colour in the flowers. Then, when with an increase of varieties came some having flowers with quite pale colours, the limitation of "Scarlet Geraniums," though always widely interpreted as inclusive of a certain class rather than of a certain shade of colour, was felt to be somewhat absurd; and in time that gave place to "Zonal Pelargoniums," the former again widely interpreted as taking in all that section known as "Scarlet Geraniums," though having flowers of various hues and leaves destitute of the zone common to many of them. A better botanical knowledge also led to the substitution of the generic term *Pelargonium* for *Geranium*. A wonderful improvement has gone on in these plants during the past twenty years; and tracing forwards from the circle of bright colour in the flowers of the well-known Tom Thumb, it has been seen to change, like a chromatope, into a wondrous variety of shades of colour and types of flowers, that now form at summer and autumn exhibitions some of their brightest and most effective features. The general term "scarlet," still found in some schedules of prizes, has become a misnomer. We are no longer confined to that sole colour, but have a range from the purest white, as found in Purity, to the deep crimson scarlet of Sambo. Thus it is easy and possible to stage, in a collection of six, nine, or twelve plants, as many shades of colour; and there is not a good variety in cultivation at the present day of which a well-grown plant does not constitute a striking and beautiful object. But classes and varieties have developed as well as colours; and the Zonal Pelargonium, swelling into importance with its high-sounding name, has assumed double forms that bid fair to become formidable rivals to the single varieties, either for exhibition or for decorative purposes. 'Tis true the range of colour in the flowers is as yet somewhat restricted; but that is a drawback that probably will not long exist, whilst it is also largely compensated for by the more permanent character of the flowers, which retain their petals and consequent usefulness for a much longer period. The Nosegay section has usually a separate class also allotted to it, because it differs in its general features somewhat distinctly from the original Zonal kinds; but later varieties have exhibited such an approximation in the form of the pip to that of the best of the Zonal section, whilst retaining all the Nosegay freedom of growth and floriferous character of

that we may naturally look by-and-by to such a fusion of the divisions as shall result in one improved type that will swallow the distinction, but leave us, nevertheless, a section perfect in beauty and in form, and possessing all those features that make the Nosegays popular both for bedding and pot-culture. I purpose in this paper to deal with the three sections of Zonal Pelargoniums here enumerated, and describe as logically as I can in what manner I prepare my own specimens, having usually been fortunate as an exhibitor in my day and generation since I first took them in hand.

Perhaps it will not be out of place to state at the outset that there is no exhibition plant that appears more to dislike training, or less to require a formal severity of shape, than the Pelargonium; and yet, in spite of these facts, there are to be found plenty of judges ready and willing to make leading awards to plants that have been subjected to a degree of training and torture that would be ridiculous were it not that it is almost disgusting in appearance. Who that has visited metropolitan shows is not familiar with those flattened surfaces bearing a resemblance to giant floral Mushrooms? or, if you like, flower-beds upon wire? What a miserable parody on plants do these things represent, tortured and twisted out of natural form, devoid of all grace and beauty! They add another instance of the fitness of the saying, that nature gave us form and outline, and humanity alone are its spoilers."

As a reverse to this, I have lately seen staged for competition at a provincial show a lot of pillar-trained plants, from 4 to 6 feet in height, certainly fairly flowered, but nevertheless looking so ungainly as to merit ridicule rather than praise. Unfortunately against them there was no competition, otherwise I should have viewed with some interest the awards of the judges, as, in spite of size and flower, I could not conceive that any sensible men would have placed these statuesque portions before well and naturally grown specimens. As a mode of training to obtain plenty of bloom the pillar plant may be very useful, but for exhibition it only deserves disqualification.

My own specimens have usually been prepared for autumn exhibition—say beginning of September; and having this in view, I get some cuttings and put them in early in the previous year, and when well rooted, potted up into 48's to stand the winter, giving the shoots their first stopping. In an ordinary greenhouse these plants will not make much growth during the winter, but by the beginning of April will be ready for a shift into 32's, giving any robust shoots another pinching. Plenty of air and light is necessary now to maintain robust short-stinted growth, and by the time the pots are well filled with roots the cold weather will have passed away, and the external air may be safely

trusted. To save much needless labour a shift should now be made into the blooming-pots (No. 12's is a good size for that purpose); and as the plants are to remain in these for a long time, a really good compost should be used, nothing being better than yellow loam, well-rotten manure, especially cow-dung, and a fair mixture of sand. I find it to be desirable to pot firmly, otherwise the soil will settle very much by the autumn, and therefore it is better to make it all the firmer at the first. When the plants are thus potted, and especially potted low down, an open situation in the garden is selected that is convenient for watering. A good hard and level bottom should be secured, or, if soft beneath, pieces of slate should be used to place the pots upon, to exclude the worms. Here the plants should be placed at proper distances from each other to admit of growth without crowding, and then filled in all round to the brim of the pots with ashes or some other good plunging material, so that the roots are thus protected from the force of the sun's rays, and consequent drought and exhaustion. The bedding Pelargonium can bear almost any amount of solar heat with impunity if its roots are kept moist and cool. As I usually put my plants in the open air at the end of May, and get them under glass from a week to ten days only before showing, they thus get about three months of thorough exposure to the weather, and are as dwarf and short-pointed as could possibly be wished. Of course the process of stopping has not been neglected, but rather has been maintained with constant regularity, every strong shoot having its extremity nipped out as fast as it had made three or four joints, care being taken also to encourage the centre growth, so as to secure a somewhat rounded form. An occasional turning round the plants will also facilitate the production of a good shape. Pinching out all points and flower-buds is rigidly continued until within one month of the time of showing, when the process is discontinued, and the plants are allowed to grow away as freely as they please.

As a result of all this careful attention and exposure, the grower will find that he has a lot of robust dwarfy bushy plants that will now commence to throw up a mass of flower well above the foliage, that will, when expanded, need but the finish of a week or so under glass to make them perfect specimens. There are no yellow or discoloured leaves to be seen, all is fresh and vigorous; and the plants, after they have brought the highest honours at the show, will, with a little attention, make a greenhouse or conservatory look very gay indeed near up to Christmas.

The Zonal Pelargonium is naturally a gross feeder, and will take up an abundance of strong diet. The use of such material, however, to plants in the open ground would have a most undesirable tendency.

lency. This objection does not exist in the case of pot-plants, as the roots being confined within a contracted space, are necessarily subject to different conditions, and need stimulants to maintain that free growth so essential to the production of good specimens. Any application of liquid manure is scarcely needed until the flowering-pots have become filled with a mass of roots; but when such is the case—and that would probably result in about six weeks from potting—then a watering of a weak mixture twice a-week is desirable; and this dose may be increased in strength when the bloom is allowed to come up, as the claim on the resources of the plants will be proportionately increased. Horse-droppings well soaked in water usually make good liquid manure, and even stronger stuff than that may be used, such as guano-water, drainings from cow-sheds, and even from the closet cesspool, as I have used this latter during the past summer in the proportion of one bucketful to about five of water with the best results. Amateur growers especially may take my word for it that they will secure better specimen plants in moderate-sized pots with a free use of liquid manure than they can obtain in large pots under any conditions, besides the credit of having produced as good or even better results in small pots than their fellow-competitors have realised in large ones.

Readers will have observed that I have not proposed the tying down or pegging of the plants in any way, and I say certainly not, as all these processes are to me highly objectionable. I do strongly contend that it should be the object and purpose of all exhibitors to produce specimen plants that have been as little as possible subjected to training with ties or sticks in any shape or fashion. Especially does this apply to the Zonal Pelargonium, as training of any description other than that induced by stopping is both unnecessary and absurd. I have now ready for show on the date that this issues from the press a fine lot of dwarf compact plants, with close rounded heads, each about 24 inches in diameter, and which will be larger still in a few weeks hence. Flower-stems are being thrown up all over them, and I have every reason to be satisfied with the prospect. The treatment that is here so strongly recommended for the Zonal section bears with equal force to the growth of the Nosegays, with the exception that some of the latter require less pinching, otherwise I make no distinction as to treatment. The double Pelargoniums are now rapidly becoming popular, and have become at many shows a class of themselves; and exceedingly attractive they are when well-grown specimens. With these pinching must be performed with rather more moderation, but should still be carefully attended to, otherwise the plants will soon become leggy. If well looked after and grown as herein described, plants as

dwarf and compact and almost as free of flower as the single varieties can easily be produced.

Heartily commending what is here written to the readers of the 'Gardener,' I shall conclude with a list of twelve good show Zonals, the same number of Nosegays, and six double-flowering Pelargoniums, all of which will well repay good cultivation.

ZONALS.

Purity.
Clipper.
Rosabella.
Excellent.
Sambo.
William Underwood.
Beauté des Suresnes.
Lord Derby.
Highgate Rival.
Madame Madeline.
Dr Lindley.
Madame Werle.

NOSEGAYS.

Grand Duke.
Violet Hill Nosegay.
Chilwell Beauty.
Gathorne Hardy.
Celestial.
International.
Eclat.
Emmeline.
Dr Hogg.
Triomphe de Stella.
Pink Globe.
Mrs Laing.

DOUBLE-FLOWERING.

Wilhelm Pfitzer.
Gloire de Nancy.

Andrew Henderson.
Victor Lemoine.

Madame Lemoine.
Marie Lemoine.

EXHIBITOR.



PETUNIAS AS BEDDING PLANTS.

THE drought has served most unmistakably to bring out the value of Petunias as bedding plants. Repeatedly have I seen them furnishing masses of effective colours without that intensity of hue so peculiar to Scarlet Pelargoniums. A little seed raised in March on a gentle heat will give an abundance of plants, and if the strain be good, some pretty things are sure to result. In my own case I use two or three very nice striped flowers obtained from what is known as Bull's Strain of Petunia. I find that, in contrast to other strains of seed I have attempted to grow, these have a peculiarly wiry and not very gross habit, and are remarkably free blooming, and have flowers quite rounded in form, of thick substance, capable of withstanding both heat and sun. These selected flowers I propagate from cuttings in February, and by the end of May I have an abundance of nice stuff. Either growing in pots, or if, as sometimes happens, I have not space enough to house them, I place a number of rooted cuttings in boxes, and when planted out they lay hold of the soil, and are soon pictures of bloom.

Those requiring a larger quantity of plants than I do for my modest little parterre, would need to begin propagating earlier in the sea-

son, say at Christmas, by putting their stock plants into a brisk heat, such as a Cucumber or Pine pit. Here they will begin to break at every eye, and by the time the shoots are 2 inches in length will be the very time also to begin striking cuttings. These placed in a gentle bottom-heat will soon root, and in their turn supply tops for cuttings. Then comes the process of hardening off, and there results an abundance of plants for bedding purposes.

To keep beds of Petunias of a neat symmetrical shape, pinching out must be done. If you want beds of Petunias that shall be indeed beds, and masses of bloom, weekly pinching must be persevered in. This should be done by shortening the shoots to one bud above the opening flower. So treated, they are continually throwing fresh flower-buds in the most admired profusion.

I have observed on two or three occasions that Messrs Bell & Thorpe of Stratford-on-Avon have a very nice strain of Petunias, as witness what they exhibited at the recent show of the Royal Horticultural Society at Oxford. Similar in habit and as fine in shape as those of Mr Bull's, they appear to run mainly on mottled flowers, by no means a bad trait, as mottled flowers are preferred by many for bedding purposes. Others attach themselves to pure self colours, and find these very satisfactory. Thus, a good strain of Petunias will be found to satisfy all these requirements; but my chief point is, select from your seedlings such flowers (in combination with proper habits of growth) as you best fancy, and propagate by cuttings so as to get plants to fill the flower-beds the following year. D. E. B.



HORTICULTURAL EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY'S GREAT PROVINCIAL SHOW, at Oxford, July 19-22. —This show took place in the grounds of the Radcliffe Observatory, a place very suitable for it, as it was pleasantly situated, nicely sheltered by trees, and the site far less rough than at Manchester. Our space will not admit of a detailed report; we can therefore only indicate a few of the more salient points of the exhibition.

In the class for the best 20 fine foliage and flowering plants, Mr Baines, gardener to H. Micholls, Esq., was well first, with large and excellent specimens of *Bougainvillea glabra*, well bloomed *Ixora aurantiaca*, *Allamanda nobilis*, *Dipladenia amabilis*, *Erica obbata*, very good; *Ixora coccinea*, very fine trusses of flowers; *Croton angustifolia*, large and well coloured; *Yucca variegata*, *Cordyline indivisa*, *Verschaffeltia splendida*, first-rate; *Stevensonia grandifolia*, very handsome; *Gleichenia rupestris*, a grand specimen; and a first-rate *Croton variegatum*. In Mrs Cole & Sons' collection, which came in second, were a large well-grown plant of *Kalosanthes punica*, *Aphelaxis humilis grandiflora*, *Hedera tulipifera*, very fair; *Erica Cavendishiana*, very good, but a very "old stager;" and good specimens of *Crotons*, *Dracænas*, *Dicksonias*, *Palms*, &c.

The best 9 foliaged or variegated plants in the amateurs' class were shown by

Mr Johnson, gardener to the Marquis of Ailesbury, Savernake Forest, who had splendid specimens of *Pandanus elegantissimus*, *Sanseveria angolensis*, *Croton variegatum*, *Alocasia macrorhiza variegata*, very handsome; *Sphærogyne latifolia*, very good; *Alocasia metallica*, a very good specimen; *Caladium Bellemeyii*, &c. The next best group came from Mr A. Wright, gardener to C. H. C. Roberts, Esq., Avenue Road, Regent's Park, with very good and familiar specimens of well-known plants. In the corresponding class for nurserymen, Mr B. S. Williams came in first with, amongst others, a very handsome specimen of *Cycas revoluta*, *Cordyline indivisa*, *Croton pictum* and *angustifolium*, *Alocasia metallica*, very fine; *Chamærops humilis*, &c.; the second prize being taken by Messrs Bell & Thorpe, with a very good group.

The best specimen stove plant in flower was a remarkably fine *Allamanda cathartica*, from Mr Baines; Messrs Standish & Co. being placed second with a very good specimen of *A. Hendersoni*. Mr Perkins exhibited a large plant of the curious but offensively-smelling *Aristolochia ornithocephala*. Mr Baines also supplied the best specimen greenhouse plant in flower—*Erica Fairreana*, very large and well flowered. The second prize was taken by Mr A. Wright, with a large nicely flowered specimen of *Kaloesanthes Madame Celeste Winnans*. From Mr B. S. Williams came the best 6 Palms, which were very handsome specimens of *Livistonia Jenkinsii*, *Stevensonia sechellarum*, and *Verschaffeltia splendida*, &c., large and well-clothed specimens. Messrs Rollisson & Son were placed second, with a very neat group; and Messrs Bell & Thorpe third. The best 4 *Dracænas*, large handsome examples of *D. atrosanguinea*, *lineata*, *australis*, and *umbraculifera*, also came from Mr B. S. Williams, who also exhibited in the same tent one of the largest and most beautifully furnished specimens of *Cycas circinalis* we have ever seen.

Orchids were sparingly shown; the best came from Mr B. S. Williams. Exotic ferns were very fine. Especially grand specimens of *Cyathea dealbata*, *Dicksonia antarctica*, *Todea Africana*, *Cyathea princeps*, *Cibotium Schiedeï*, and *C. furcans*, from the same exhibitor.

Messrs Ivery & Son, E. J. Lowe, and J. E. Mapplebeck were exhibitors of British ferns, the two last named especially having collections of rare merit.

The only exhibitors of 4 hardy Clematises in pots or tubs were Messrs Jackman & Son of Woking. The plants were one of the special features of the show, and attracted a large share of attention on account of their extreme beauty. They were grown in pillar form, from 3 to 5 feet in height, and about 3 feet through, and were well covered with blooms. The best were *Jackmannii*, *Rubella*, these two very fine; *Lauginosa candida* and *Lady Bovill*.

Fuchsias were indifferently shown: it would have been well if one or two prizes awarded had been withheld on the ground of insufficient merit. There were no large flowering or fancy *Pelargoniums*, and the Zonal *Pelargoniums* were below the average.

The class for 3 double *Pelargoniums* brought several competitors, and some very well grown and flowered plants. The best 3 came from Mr F. Perkins, Regent Street, Leamington, whose plants were of medium size, a trifle deficient in habit but well formed. The sorts were *Madame Lemoine*, *Marie Lemoine*, and *Wilhelm Pfitzer*. Messrs Downie, Laird, & Laing were second, with large and well-grown plants, not carrying so much flower: the sorts were *Madame* and *Marie Lemoine* and *Gloire de Nancy*. Messrs Standish & Co., Ascot, were third, with *Gloire de Nancy*, *Capitaine l'Hermite*, and *Madame Lemoine*. The best 6 plants competing for the special prizes offered by the Rev. W. V. Harcourt, came from Mr Wm. Bragg, Star Nursery, Slough, and were nice young plants, well grown and

bloomed, the sorts being Gloire de Nancy, Madame Lemoine, Capitaine l'Hermite Victor Lemoine, Marie Lemoine, and apparently Victor, though named Victor Lemoine. 2d, Messrs Bell & Thorpe, with Triomphe de Thumesnil, Marie Lemoine, Hector, Miss Evelyn, a deep-coloured Madame Lemoine, with fine full flowers; Gloire de Nancy, and Wilhelm Pfitzer. These were larger and well-grown plants, but somewhat spare of bloom. The best 6 variegated Pelargoniums came from Mr Turner, who had young, finely grown, and healthy plants of Princess Alexandra, May Queen, Miss Bridges, Jane, Albion Cliffs, and Compactum; 2d, Mr J. E. Mapplebeck, with large but old plants, having the usual defect of small growth; 3d, Mr F. Perkins—but this group contained two gold and bronze kinds, not usually classed with the variegated kinds. In class 18, for 6 variegated Zonals, not only were the plants extremely well done, but the competition was very close also. The best 6 came from Mr T. Welch, gardener to D. Rutter, Esq., Hillingdon, Uxbridge, having capital examples of Lucy Grieve, Sophia Cusack, Countess Tyrconnell, Italia Unita, Sophia Dumaresque, and Lady Cullum; 2d, Mr J. Stevens, Ealing, with plants scarcely inferior, but losing, perhaps, about half a point in the matter of growth; his kinds were, Mrs Turner, Gamos, Sophia Dumaresque, Sophia Cusack, Lady Cullum, and Italia Unita; equal 3d, Messrs C. Turner and J. Tomkins, Spark Hill Nursery, Birmingham: the former with small but finely-developed plants, the latter with large ones. The special prizes offered by Sir A. W. Peyton, Bart., for 6 "tricolored" Pelargoniums, brought another close competition between Messrs Welch and Stevens the former being placed first.

The attempt made to encourage the growth of Delphiniums, Lobelias, Phloxes, Pentstemons, Antirrhinums, and suchlike, in pots, was certainly encouraging up to a certain point, though much more remains to be done. The Delphiniums staged by Mr Turner were of the most praiseworthy character, and showed most conclusively the superiority of young over old plants when well grown.

Mr Turner was a long way first with 6 Delphiniums in 12-inch pots, having the following beautiful varieties, all superbly bloomed: Madame Chate, L'Elégante, very fine; Mons. Stenger, Le Grand, Imperial Blue, and Bella Donna. 2d, Messrs Bell & Thorpe, with plants of inferior growth. 3d, Mr H. Hooper, Bath. A second prize was awarded to Messrs Bell & Thorpe for 6 Lobelias, fulgens type, they being the only exhibitors. They had Ringleader, rosy purple; Marvel, cerise crimson; Carminata, rosy carmine; and some seedlings. They were somewhat large plants, not nicely grown, and only just coming into flower. The group of Phloxes to which the first prize was awarded consisted of Madlle. Trotter, Madame Rendatler, these two being very much alike; James Veitch, Liervalli, Charles Rouillard, and Madlle. M. Saison. Three or four of these were well done, the others were somewhat deficient. Messrs Downie, Laird, & Laing came next with more even and very well bloomed plants of Mons. Linden, Mrs Campbell, Comtesse de Malart, James Veitch, Deacon, and one other. The flowers of these were a little undersized. Mr Henry Hooper was third, and there were several other competitors. The best 6 Pentstemons came from Mr J. J. Chater, Gonville Nurseries, Cambridge. They were well grown and bloomed.

Cut flowers were very numerous, and of these Carnations and Picotees were especially fine. The best 24 in the nurserymen's class came for Mr C. Turner, who had: Scarlet Bizarres—Dreadnought, Lord Lewisham, Lord Rancliffe, Oliver Goldsmith, and Prince Albert; Crimson Bizarres—Anthony Dennis, Captain Franklin, Eccentric Jack, Graceless Tom, Rifleman, and Young Milton; Pink and Purple Bizarres—Princess Royal and Twyford Perfection; Purple Flakes—Colonel Wyndham and Squire Meynell; Scarlet Flakes—Annihilator, Coronation,

Mr Battersby, and William Cowper ; Rose Flakes — Aglaia, Flora's Garland, James Merryweather, King John, and Rose of Stapleford. 2d, Mr George Edward, York, with smaller flowers, the best being : Rose Flakes—Mr Patey, Mr Walton, and James Merryweather ; Purple Flakes—Mrs Gunning and Mayor of Nottingham ; Scarlet Flake—George Edward ; Crimson Bizarres—Rainbow and John Davidson. The best 12 in the amateurs' class came from Mr S. C. Buttrum, Burgh Mills, Woodbridge, who had S. B. Lord Ranccliffe and Sir J. Paxton ; C. B. Rainbow, John Bright, and Tenby Rival ; P. and P. B. Hannibal and Sarah Payne ; P. F. Premier ; S. F. John Bayley and Marmion ; R. F. Flora's Garland and Uncle Tom.

The Earl of Abingdon's special prize for 12 Carnations was also taken by Mr Turner, with S. B. Admiral Curzon, Duke of York, and Lord Lewisham ; C. B. Eccentric Jack and Rifleman ; P. and P. B. Princess Royal ; P. F. Colonel Windham ; S. F. Sportsman and Mr Battersby ; R. F. Flora's Garland, James Merryweather, and King John. 2d, Mr N. Norman, Plumstead, with a good stand of flowers, mostly seedlings.

The best 24 Picotees, in the nurserymen's class, also came from Mr Turner, and consisted of : Red-edged—Chancellor, Colonel Clerk, Exhibition, Forester, Lavinia, Lord Valentia, Mrs Norman, and Miss Turner ; Purple-edged—Frances, Jessie, Mary, Mrs Summers, Mrs May, Picco, and Admiration ; Rose-edged—Elise, Lucy, Juliana, Obadiah, Alfred Ingleton, Mrs Rollings, Queen Victoria, Purity, and a bright-looking seedling purple-edged flower. 2d, Mr George Edward, with nice flowers of the following : Red-edged—Fairest of the Fair, George, and John Feather ; Purple-edged—Lord Mayor of York and Mrs Hanaford ; Rose-edged—Hannah Maria and Harriet.

In the amateurs' class for 12 Picotees, Mr D. Pizzey was first with fine flowers of the following : Red-edged—Eliza Forester and Rosetta ; Purple-edged—Frances, Ganymede, Jessie, Margaret, Mary, Admiration, and Mrs May ; Rose-edged—Lucy and Princess Alice. 2d, Mr N. Norman, with Purple-edged—Jessie and Margaret ; Red-edged—Mrs Newhall and Prince of Wales, and some good seedlings.

The best 12 Pinks came from Mr G. Kirtland, who had Rev. George Jeans, Annie, Brilliant, Mary Ann, Attraction, Blondin, President, C. Turner, Bertram, John Bull, Victory, and a seedling. 2d, Mr D. Gammon, Marston, whose best flowers were Marion, C. Turner, and John Bull. The best 12 competing for the special prize offered by Mr J. G. Henderson, came from Mr D. Gammon, and consisted of Alfred, Diadem, Charles Turner, Rev. George Jeans, Bertram, Miss Nightingale, John Bull, Royal Standard, Device, Blondin, Mrs Norman, and Marion.

Several collections of cut Zonal Pelargoniums were staged : the best came from Mr J. Walker, Thame ; the second best from Mr C. J. Perry ; 3d, Mr H. Minchin. A very fine dark-crimson variety, named Madame Amelotte, was in Mr C. Perry's stand. Mr Perry had all Zonal kinds, Mr Walker had one or two Nosegays. The cut blooms of double-flowering varieties were an interesting feature, and the competition taught how much a little taste in setting up helped their appearance. The best came from Mr F. Perkins, Leamington, and were set up in nice bunches, backed by their leaves. Twelve varieties of 5 trusses each were required, and they consisted of Andrew Henderson, Gloire de Nancy, Madame M. Buckner, rather darker than Madame Lemoine ; Marie Lemoine, Wilhelm Pfitzer, Triomphe de Thumesnil, Capitaine l'Hermite, Madame Lemoine, Victor, Triomphe, Victor Lemoine, and Madame Rose Charmeux. 2d, Messrs Kelway & Son, with some very nice trusses, but not so well set up, including Sparkhill Beauty, and Rosetta, in the way of Capitaine l'Hermite.

The best 12 cut Verbenas were staged by Mr C. J. Perry, and consisted of Edwin Day, Rev. C. Peach, James Birbeck, Rev. P. M. Smythe, Firefly, Butterfly, Rising Sun, Mrs George Prince, Thomas Harris, and seedlings. 2d, Mr H. Minchin, who had good examples of Champion, Charmer, Mrs Pochin, Richard Dean, James Birbeck, and Géant des Batailles. The special prize offered by Mr George Prince for the best 36 varieties was also taken by Mr Perry, he being the only exhibitor. His sorts consisted of Nebula, James Birbeck, Madame H. Stenger, Champion, Rev. C. Peach, Carnation, King of Lilacs, Rose Imperial, Kate Lawden, Thomas Harris, Ada King, Géant des Batailles, Model, Leah, Mr George Prince, Rising Sun, Annie, Rev. P. M. Smythe, Velocipede, Apollo, Black Prince, Lord Leigh, Firefly, Thomas Lawden, Rev. J. Dix, Magnificus, and seedlings.

Cut Roses were much past their best, and those that were at all good were soon despoiled of their beauty and freshness by the great heat that prevailed in the tents. The best 48 came from Mr John Cranston, Hereford. The best amateur's 48 from Mr C. J. Perry.

The best 12 Roses of 1867, '68, '69, came from Mr C. Turner, the sorts being Comtesse de Hainault, Marie Cirodde, Charles Perry, Baronne A. de Rothschild, Francois Fontaine, La France, Duke of Edinburgh, Nardy Frères, Edward Morren, Miss Poole, and Elie Morel; 2d, Messrs Paul & Son; 3d, Mr B. R. Cant. The best 9 varieties of yellow Roses came from Messrs Paul & Son, and consisted of Maréchal Niel, very fine; Mons. Furtado, Madame Falcot, Triomphe de Rennes, Madame Villermoz, Gloire de Dijon, Madame Margottin, Lamarck, and Celine Forestier; 2d, Mr C. Turner, who had Solfaterre, Reine de Portugal, and Narcisse, differing from the foregoing; 3d, Mr J. Cranston. The special prize offered by the Oxford Rose Society for the best collection of cut Roses sent out in 1867, '68, '69, '70, was taken by Mr C. Turner; 2d, Mr B. R. Cant. The best 6 varieties of new Roses sent out in 1868, '69, '70, also came from Mr Turner, and consisted of Duke of Edinburgh, Reine Blanche, Henri Ledechaux, Lord Napier, Montplaisier, and Edward Morren. In the class for the best 24 Roses of any one variety, a special prize being offered by Mr George Prince, no award was made, the judges considering those staged unworthy the prize. The best 3 blooms of any one variety was Pierre Notting, from Mr B. R. Cant, very fine. Mr Cant also had Comtesse de Paris, fine also; and Maréchal Niel.

FRUIT.—The fruit department was quite as well represented as at Manchester, and occupied the central staging of a long tent. Pines were not quite so numerous, Black Grapes were scarcely up to the average, Muscats and other White Grapes were very good. The show of Peaches and Nectarines was not over large, though some very good fruit was shown. The 'Gardeners' Chronicle' prizes were taken by Mr Miles, gardener to Lord Carrington, Wycombe Abbey, and Mr J Simpson, gardener to Lord Wharnccliffe, Wortley, though the prize in the latter instance was not awarded in accordance with the wording and proper interpretation of the schedule, more than 6 distinct kinds of fruit being shown; whilst the 'Journal of Horticulture' prize fell remarkably easily to Mr J. Miller, gardener to Lord Foley, Worksop Manor, there being no other competitor. The exhibits were certainly not worth the prize, and it is a question whether the judges would not have done better by withholding it altogether.

For the prizes offered by the 'Gardeners' Chronicle' there were five competitors. It was a very close race between Mr Miles and Mr J. Simpson, Wortley, for the 1st prize; and had it not been for a mishap on the railway it would have been even more so, with the probability of the prize going to Mr Johnson, gardener to the Marquis of Aylesbury, Savernake, whose fruit, from some cause or

other, was much bruised. In Mr Miles's collection were three very fair bunches of Buckland Sweetwater Grapes, a good Queen Pine (weighing 5½ lb.), nice Scarlet Gem Melon, very fine Barrington Peaches, Downton Nectarines, and Kirk's Plum; and of vegetables, Globe Artichokes (good), flat Tripoli Onions (of immense size), French Beans, wonderful Broad Beans, and Myatt's Prolific Potatoes. In Mr Simpson's collection, the Grapes—Black Hamburg and Muscat of Alexandria—were good in bunch and berry, but wanting in colour. His other fruit were very good Pines, Melons, Peaches, and Nectarines—and of vegetables, Cauliflowers, Peas, Artichokes, Turnips, Potatoes, and Cucumbers, &c. Mr Johnson came next in order of merit; his vegetables were first-class, but the fruit was rubbed and disfigured. The other competitors were Mr Challis, gardener to the Earl of Pembroke, Wilton House, Salisbury; and Mr R. Kean, gardener to J. G. Sheppard, Esq., Haigh House, Campsy, Suffolk. In Mr J. Miller's collection, which took the 'Journal of Horticulture' prize, the Pines and Nectarines were of a very fair order; but the Grapes, Peaches, and Strawberries were of the poorest description, and in one or two instances were positively bad.

The best 3 Pines came from Mr Paton, gardener to H. S. Lucy, Esq., Charlote Park, Warwick, and were very fine specimens of Moscow Queen; the next best were large examples of the Providence variety, exhibited by Mr Allen, gardener to J. B. Glegg, Esq., Withington Hall, Congleton; whilst the third position was occupied by Mr W. Gardiner, gardener to E. P. Shirley, Esq., Eatington Park, with two Moscow Queens and a Providence. Mr G. Ward, gardener to T. W. Miller, Esq., Bishop Stortford, sent specimens of Smooth Cayenne, weighing 7 lb.; a Queen, 4 lb. 11 oz.; and a Charlotte Rothschild, 7 lb. 10 oz.: other examples of Black Jamaica, Queens, &c., were shown. Mr Paton also came in first in the class for a single fruit, any variety, with a fine Enville, weighing 8 lb. 14 oz.; the second best was a Moscow Queen, 4½ lb. in weight, from Mr Gardiner; and the third a specimen of the smooth-leaved Cayenne, weighing 7 lb., from Mr G. Ward. Only one collection of 12 dishes, 6 distinct kinds, was shown in that class, which came from Mr Clark, gardener to Earl Cowper, and consisted of Pines, Grapes, Peaches, Nectarines, Apricots, Melons, &c. Eight dishes of Black Grapes were staged, the best being contributed by Mr Coleman, gardener to Earl Somers, Eastnor Castle, Ledbury, which consisted of three exceedingly well finished bunches of Black Hamburg, weighing 12 lb. 6 oz.; Mr J. Smith, gardener to the Earl of Gainsborough, Exton Park, came in second with fine examples of the same variety; and to Mr Turner, Slough, and Mr J. Ralty, gardener to C. Scholefield, Esq., Turville Park, Henley-on-Thames, equal third prizes were awarded, the competition being so close. The number of competitors in the class for White Grapes exceeded the former by one, the specimens shown being uniformly good. The first prize was awarded to an excellent dish of Muscat of Alexandria, large in bunch and berry, and of a good colour. These came from Mr J. Thomas, gardener to Mrs T. Drake, Bignell, Oxon. Mr Turner came in second with good bunches of the same variety; Mr R. Ianson, gardener to S. Statter, Esq., Stand Hall, Manchester, was third. Mr Colegrave sent large bunches of Buckland Sweetwater, but deficient in colour. Several examples of Muscat of Alexandria were shown, in very green condition. Mr Coleman sent the best basket of Grapes, good specimens of Black Hamburg, the next best coming from J. Thomas, and consisting of very fine Muscat of Alexandria; Mr R. H. Smith, gardener to H. Walker, Esq., Calderstone, Liverpool, and Messrs Standish & Co., were placed equal third. Eleven baskets were shown; among them one of Gros Colmar attracted much attention from the highly-finished style in which it was shown by Mr Ward, gardener to T. W. Miller, Esq.

For the best 6 varieties of Grapes, 3 bunches of each, there were several competitors. Mr Turner took Professor Lawson's prize of 5 guineas, with very fair specimens of Royal Ascot, Buckland Sweetwater, Muscat of Alexandria, Black Prince, Black Hamburg, and Black Alicante; Messrs Lane & Son secured the second prize, given by S. Davis, Esq., with, amongst others, Golden Champion, fine in size, but quite green, and apparently unripe; Foster's Seedling, Buckland Sweetwater, &c.; Mr J. Wallis, gardener to J. Dixon, Esq., Aistle Park, Congleton, secured the third prize, given by Mr Sheriff Hanley, with fruit of a very moderate quality. Whilst noticing the Grapes, we must not forget to mention a fine exhibition made by Mr Speed, gardener to the Duke of Devonshire, Chatsworth, which were "cut from Vines 37 years old, rejuvenised upon the extension system." The exhibition consisted of three remarkably fine, compact, and well-finished bunches, each of Mill Hill Hamburg, Black Prince, and Black Hamburg. The berries of the former were very large, as also were the bunches of Black Prince.

Fourteen dishes of Peaches were shown, the best being very fine well-coloured Barringtons from Mr J. Wallis; Mr Miles, gardener to Lord Carrington, came in second with first-rate specimens of Goose Mignonne; and Mr Sage, gardener to Earl Brownlow, Ashbridge, third with Bellegarde. Good examples of Royal George, Gallande, Violette Hâtive, Barrington, and Noblesse were also staged by other exhibitors. In the corresponding class for Nectarines, 10 dishes only were staged: Mr H. Tuke, gardener to R. Nicholls, Esq., Bromley, Leeds, came in first with Violette Hâtive, large and finely coloured; specimens of the same variety, from Mr J. Miller, were placed second. Pitmaston Orange, Elruge, and Hunt's Lawny, were also very fairly represented. In Apricots there were only three competitors; Mr J. Smith took first honours, and Mr W. Early, Digswell, second.

Vegetables were numerous represented, and, the season considered, generally of good quality. There were many other articles staged, but not of a character to call for special remark.

The show of glass structures, garden implements, requisites, &c., was as numerous as ever, and these will be attended to and illustrated as their value becomes demonstrated, and opportunity offers.

ROYAL HORTICULTURAL SOCIETY PELARGONIUM SHOW, August 3.—Whether it was that the classes of Variegated Pelargoniums are less regarded than they were, or owing to the drought having affected the coloration of the leaves; or whether because the prizes offered were considered too small in amount to induce exhibitors to take their plants to the show; in each class one variety, three plants of each had to be shown. The best golden-edged variegated Zonal Pelargonium was a fine-looking, robust, and well-coloured variety named the Rev. E. R. Benyon, one of Mr Grieve's raising, and exhibited by Messrs E. G. Henderson & Son. The next best was Gold Crown, from Mr John Mann, Brentwood; and the next, Ealing Rival, from Mr John Stevens, Ealing. The best silver-edged variegated Zonal was Lass o' Gowrie, also from Messrs E. G. Henderson & Son—a vigorous grower, and well coloured, but rather rough-looking; the next best Mrs Rousby, from Mr C. Turner, very promising, and with nice smooth leaves; 3d, Mr C. Edmonds, Hayes, with Hayes' Rival. Each of the winning plants in these two classes had been grafted on a strong-growing stock, said to be the double-flowering Gloire de Nancy, which, to all appearance, gave the plants great robustness of habit as compared with those on their own roots. The best gold-and-bronze Pelargonium was Imperatrice Eugenie, very finely grown and coloured, shown by Messrs Downie, Laird, & Laing; 2d, Mr Henry Cannell, Woolwich, with Annie

Keeler. Messrs Downie Laird, & Laing also had Black Douglas and Reine Victoria; but, unlike the practice of other Pelargonium exhibitions, the judges only awarded one prize to one exhibitor in each class, even though that exhibitor might have plants of a better variety than the one gaining the second prize. A single plant of an indifferent golden-leaved variety, named Golden Defiance, was staged by Mr Ford of St Leonard's Gardens, Hexham. Happily for the interests of floriculture, but one plant was staged, so no prize was awarded, or there is too much reason to fear it would have been awarded a first, on the seeming ground that the judges are bound to give the prize to the best thing staged in every class, even though the best may be very bad. The best silver-edged variegated Pelargonium was May Queen, from Mr C. Turner, who was the only exhibitor in this class; he had also Bright Star and Princess Alexandra, both well worthy the second and third prizes, but they were not awarded. The best Ivy-leaved Pelargonium was Compactum, a close wiry-growing variegated variety, from Mr C. Turner, the only one staged for competition. The best Nosegay Pelargonium was W. E. Gladstone, from Mr George Smith, Tottington Nursery, Islington, with large trusses of bright orange-crimson flowers; 2d, Mr H. Cannell, with Master Christine, said to be a hybrid Nosegay, with large trusses of deep pink flowers, and remarkably free. By many competent judges this was thought to be the best of the two. Giant Christine was also shown by Mr Cannell, the flowers pale pink and very large, the habit dwarf. The best Zonal Pelargonium was Lord Derby, shown in fine condition by the raiser, Mr John Mann, Brentwood. The next best was Annihilator, from Mr J. George of Putney Heath, having glowing fiery-red flowers. Mr Mann had several other fine varieties, but no third prize was given. Messrs Downie, Laird, & Laing and H. Cannell were the only exhibitors of double Pelargoniums; the former had three well grown and bloomed plants of Marie Lemoine, the latter the same number of small but nicely-flowered plants of Madame Lemoine.

Prizes were also offered for the best dish of early Plums. This was taken by Mr Douglas, The Gardens, Loxford Hall, Essex, with Greengage; the second best being Morocco, from Mr Porter, gardener to C. Benham, Esq., Isleworth. Some fruit of M'Laren's Prolific Raspberry, which was awarded a first-class certificate last year as a fine free-bearing autumnal kind, was produced on this occasion, and much admired. It was exhibited by the raiser, Mr M'Laren, Ash, Surrey. From the Orchard-house at Chiswick came some Mulberries, which were found to be much finer in every respect, and more melting, than in the case of fruits plucked in the open air.

ROYAL HORTICULTURAL SOCIETY, Aug. 17.—This meeting proved extremely interesting for the excellent display of cut Gladioli, Phloxes, and Hollyhocks brought together. The former were very finely shown, and their superb beauty was much admired. The 36 cut spikes staged by Messrs Kelway & Son, Langport, were magnificent, and consisted of the following sorts: Homer, Noémie, Anna, Canova, Van Dyck, Sultane, Mons. de Brogniart, Orphee, Leonora, Mathilde de Landevoisin, Virgile, Norma, Duc de Montebello, Prince Imperial, De Humboldt, Schiller, Newton, Lacedepe, Le Gouve, Velleda, Eugene Scribe, Formosa, Rossini, Stella, Meyerbeer, Elizabeth, James Veitch, Agnes Mary, Robert Fortune, Madame Desportes, Freemason, Rosa Bonheur, Le Titien, Molière, Spectabilis, and Madame Vilmorin. The second prize was withheld; but had not a collection of flowers from Messrs Thomas Bunyard & Sons, of Ashford, arrived too late, it would have been placed second. 3d, Mr Robertson, Helensburgh, Dumbarton. With 18 spikes, Messrs Downie, Laird, & Laing, Edinburgh and London, were placed first with a

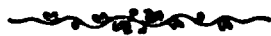
fine lot consisting of Milton, Alexandra, Crystal Palace, Diomede, Meyerbeer, Shakespeare, Fulton, Lacepede, Le Gouve, Sultan, Norma, Horace, Madame Zinder, Orphee, Canova, Le Poussin, Hortense, and Madame Leseble. Messrs W. Draycott & Son, Humberstone Nursery, Leicester, were second. Messrs Stuart & Mein, Kelso, had a stand containing a few remarkably fine spikes, but they were shut out from the competition by reason of not having been entered. With 12 spikes, in the class for amateur growers, the Rev. H. H. Dombrain, Ashford; and Mr Fry, gardener to V. Stuckey, Esq., Langport, were placed equal first, with capital stands; the former had Leonora, Agathee, Roi Leopold, Eleanor Norman, Rosa Bonheur, James Veitch, Madame Furtado, Maurice Dumortier, Madame Dombrain, Homere, Marie Stuart, and Orphee. Mr Fry had Newton, Madame Furtado, Le Gouve, Mathilde de Landevoisin, Norma, Vandyke, Noemie, Madame Vilmorin, Charles Turner, Shakespeare, Agnes Mary, and Cymbal; Mr Douglas, of Loxford Hall Gardens, was second. The best 9 also came from Mr Fry, the next best from Mr Douglas. The best 6 from Mr Welsh, gardener to Marshall, Esq., Taunton—he being the only exhibitor. The best 4, which were very fine, came from Mr Fry; the next best from the Rev. H. H. Dombrain.

Hollyhocks, both in spikes and cut blooms, were good, the season considered. Some of the latter were very fine. The best 24 cut blooms came from Mr William Chater, Saffron Walden, who had Fanny Chater, Conquest, Champion, Walden Queen, Leah, Leviathan, Constance, King, Scarlet Gem, Bullion, Eclipse, Jewel, Alfred Chater, Perfection, Crimson King, Mochanna, Carus Chater, Talisman, Lord Napier, Walden Primrose, Midnight, Bijou, Junia, and one unnamed. Mr H. Minchin was second, and Messrs W. Draycott & Son third. The best 12 blooms came from Mr W. Minchin, Hook Norton, who had Invincible improved, Ruby Queen, Hercules, Whitley King, Acme, Sanspareil, Alypius, Queen Victoria, Peri, Midnight, Ada, and one unnamed. The best 6 spikes came from Mr W. Chater, who had Fascination, Conquest, Fred. Chater, Scarlet Gem, Cygnet, and Eclipse, all good; 2d, Messrs Downie, Laird, & Laing, with John M'Donald, Miss Henderson, Queen of Yellows, Lady W. W. Wynne, Alexander Henderson, and Mrs Downie; 3d, Mr H. Minchin. The best cut Phloxes came also from Messrs Downie, Laird, & Laing.

Prizes were also offered for the best dish of Apricots, which was won by Mr W. Tillery of Welbeck Gardens; 2d, Mr Gardener, Lower Easington. First-class certificates were awarded by the Fruit Committee to Mr J. R. Pearson, Chilwell Nurseries, Nottingham, for two seedling Grapes; also to Mr Dry of Hayes, for a seedling purple Plum, named Duke of Edinburgh. Some further account of these will be found under the head of "Notes and Queries."

THE NEWARK GOOSEBERRY-SHOW.—This exhibition was held at the Robin Hood Inn, Newark, on the 1st of August, and judging from the weight of some of the fruits staged on this occasion, they must have been very fine. Our readers not acquainted with the routine of Gooseberry-culture for exhibition purposes, must bear in mind that, in order to give the fruit every opportunity of attaining a great size, only about three or four are allowed to remain on the tree, and that is fed with liquid manure and other stimulants to create size. Only those also who have looked into a Gooseberry-show can realise any idea of what it is like, and also come to understand the extraordinary amount of enthusiasm it calls into play. Generally, the large show-Gooseberries are worthless for dessert purposes, and a handful of fruits of the Red Warrington would far outweigh many of the monsters staged at a Gooseberry-show in point of quality. On the occasion of the Newark show, the mayor of that town occupied the chair. Even

much more pretentious shows often sigh in vain for municipal support. It would seem his worship was an exhibitor at the show, and not a whit the less useful mayor will he be in consequence. Weighing commenced about four o'clock, Mr H. P. Foster officiating as weigher, and Mr Sandaver of Southwell as judge. The following is a list of the awards: Premier Prize (heaviest of all colours)—Mr J. T. Egglestone's London, 26 dwts. 4 grs. Reds.—Mr Fretwell's London, 26 dwts. 2 grs. ; Mr Newton's London, 25 dwts. 14 grs. ; Mr Grocock's Ploughboy, 21 dwts. 3 grs. ; Mr Earp's Wonderful, 18 dwts. 21 grs. Yellows.—Mr Fretwell's Leveller, 21 dwts. 22 grs. ; Mr Grocock's Leader, 20 dwts. 15 grs. ; Mr Chatwin's Leveller, 20 dwts. 2 grs. ; Mr Noddall's Drill, 17 dwts. 16 grs. Greens.—Mr W. Clarke's Stockwell, 21 dwts. 1 gr. ; Mr C. Clark's Stockwell, 20 dwts. 12 grs. ; Mr Asman's Green London, 20 dwts. ; Mr Asman's Shiner, 18 dwts. 2 grs. Whites.—Mr W. Clarke's Antagonist, 20 dwts. 19 grs. ; Mr Chutwin's Antagonist, 20 dwts. 18 grs. ; Mr C. Clarke's Careless, 19 dwts. 9 grs. ; Mr Bishop's Careless, 19 dwts. 1 gr. Best Pound—Mr Fretwell, 14 berries. Second Pound—Mr W. Clarke, 15 berries.



REVIEW.

HOME-MADE WINES : HOW TO MAKE AND KEEP THEM. WITH OBSERVATIONS ON GATHERING AND PREPARING THE FRUIT, FINING, BOTTLING, AND STORING. By G. Vine. London: Groombridge & Sons.

IN a neat, compact, readable little book of forty-eight pages, the author tells us much of an extremely useful character. A season when fruit of all kinds abounds is just the time to bring out a manual treating on the manufacture of wines, when, in many large gardens especially, and not a few small ones, there is often seen a lamentable waste of fruit, that might and can be made into good wholesome wines. "Considering," says the author in the introduction to this little book, "the large number of fruits from which excellent wines may be made, and their economy compared with the cheapest of foreign wines, it is remarkable that home-made wines are not more common. Probably of those whose gardens produce abundance of rich fruits, not one "goodwife" in a hundred makes a bottle of British wine, except the old-fashioned and wholesome elder that has been known and drunk for generations. Perhaps this neglect of our native fruits may be accounted for by the want of a cheap treatise giving plain directions for the manufacture of home-made wines. To supply this want is the object of the present little work."

Mr Robert Fenn, of Woodstock, Oxon., has done good service from time to time, in various of the gardening papers, in putting the question of wine manufacture before the readers of these periodicals, and pressing it home as a matter of social economics. More than that, he has frequently illustrated what he has himself done in the way of producing good wines "that maketh glad the heart of man," from Grapes, Rhubarb, Gooseberries, &c., by submitting the same to the taste of juries at some of the leading flower-shows. We have tasted, by his hospitable fireside, wines of excellent quality, all generous beverages, far superior to many of the cheaper foreign wines of the present day, which he was enabled to manufacture and bottle at the small cost of something like *fivepence three-farthings per bottle*. What Mr Fenn has been able to do with his superabundance of fruit hundreds of others can do in like manner, and with results as satisfactory in every respect. That all this waste of fruit should go on from year to

year without any attempts to utilise it, seems monstrous and absurd. Probably the plea of ignorance as to the rules of manufacture might have been put in ; but now that this small manual brings the matter home in all its details, the plea of ignorance will have to be abandoned. We heartily commend this book to the attention of our readers.



NOTES AND QUERIES.

[We regret being obliged to postpone several valuable communications.—EDS.]

ERRATA.—In August number, page 357, line 14, *for* “Coss,” *read* “Cos;” page 370, line 23, *for* “Apholexis,” *read* “Aphelexis;” page 383, *for* “Vida Blue Perfection,” *read* “Viola.”

POTATOES, SETS, WHOLE OR CUT?—Rear-Admiral Hornby, of Prescott Cottage, Knowsley, Lancashire, writing to us anent Potatoes, states in regard to this matter : “One thing is quite plain to me, that our plan in this country of cutting sets is all wrong. The contrast between cut and uncut sets (especially of Paterson’s Victoria) is something remarkable.” What is the experience of others of our readers?

FUCHSIA, CHAMPION OF THE WORLD (Seeker).—This huge double variety, which you saw at the Regent’s Park Show on the 2d of June last, will be distributed by Mr Henry Cannell of Woolwich in the coming autumn. He thus describes it : “An intense bright coral-red tube and sepals; the corolla is of a most beautiful violet-blue colour, of immense size and thickness, and expanded to the extent of 2 inches and more across. The size of the blooms is certainly something extraordinary, and will cause a sensation in every greenhouse.” If you are an admirer of floricultural monstrosities, purchase it; if, on the other hand, you admire what is elegant and graceful in Fuchsias—don’t.

NAME OF FLOWER (J. Kempson).—The bloom of Clematis sent is undoubtedly *C. Jackmannii*. We are not surprised to find you writing of it in such warm terms of praise. The straggling habit of your plant is no doubt traceable to the fact that the old wood was not cut away last autumn. In November give the roots a good dressing of decayed manure; and in the spring, say February, just as the buds begin to swell, cut it back to within 6 inches of the ground. You will be astonished at the growth it makes in one season when so treated.

HYBRID LIME (A. B. C.).—Your tree may be a hybrid between the Lime and the Elm, as you suppose. We will consult some botanical authority in the matter, and give you the opinion expressed regarding your tree.

AMERICAN BLIGHT (A Perplexed One).—You have ample cause to be perplexed. Root the trees up and burn them; burn the soil in which they grew, add some fresh soil to it, and replant perfectly clean trees. Anxiety, labour, and cost will be saved thereby, and a better chance of a crop of fruit made probable.

SELECTION OF APPLES AND PEARS (B. J., Frome).—The following nine varieties of dessert Apples, given in the order of their ripening, will be likely to meet your requirements : Summer Golden Pippin, Kerry Pippin, Cox’s Orange Pippin, Adams’s Pearmain, Scarlet Nonpareil, Gravenstein, Court Pendu Plat, Cockle Pippin, and Herefordshire Pearmain. The best nine Kitchen Apples : Lord Suffield, Wormsley Pippin, Blenheim Orange, Waltham Abbey Seedling, Mere de Menage, Dumelow’s Seedling, Cox’s Pomona, Emperor Alexander, and Old

Hawthornden. The best twelve Pears for succession on Quince Stocks will be found in the following: Williams's Bon Chretien, Fondante d'Antonne, Jersey Gratioli, Suffolk Thorn, Comte de Lamy, Louise Bonne of Jersey, Marie Louise, Passe Colmar, Glout Morceau, Beurre d'Aremberg, Winter Nelis, and Beurre Rance. All these can be obtained of any nurseryman in a nice pyramid form.

HARDY CLEMATISES (Q. J.)—The best, most distinct, and most floriferous of Jackman's lot are Jackmannii and Rubella. Both of these you should have. Lady Bovill, which looks much better on paper than it was shown at Oxford by Messrs Jackman & Son, has very much of the habit of *C. lanuginosa* about it, and never will be so free as the one first named. Get the two just named at once, and wait a bit for light varieties till something definite is known of them. Mr Charles Noble of Bagshot, and Messrs Thomas Cripps & Son, Tunbridge Wells, are to send out some very fine new varieties shortly.

EXHIBITING DAHLIAS (A Young Beginner).—The following remarks will be found to contain, in a condensed form, the rules laid down by Messrs Glenny, Turner, and other prominent exhibitors of the Dahlia: First, then, we recommend young exhibitors to cut the flowers that are most perfect; that is to say, with centres as full up and outlines as fine as they can find them, without regard to colour or size. Of course, among these there will be some large, some middling, and some even less than middling, therefore the next thing is to divide them into the three sizes. Beginning, then, with the largest that are perfect, they must begin with the back row. If they can, they should put the best two light ones at the top corners, and the best two dark ones next to them, working towards the centre. The next two must be the next best light ones they can produce, and the next best dark ones in the centre. They may then look to the middle-row size, and put the best two dark ones at the two ends, under the two top corners; two light ones next under the top dark ones, then two other dark and two light ones in the centre. The bottom row is done after the plan of the top; and when these are all arranged, look among the spare flowers to see if any are better than you have already placed, but be careful that you have no duplicates, because two of one sort disqualifies the stand. It is just possible that you may be deficient of light or dark flowers, and unable to carry out the plan to your liking. In this case, see if you can mend matters by putting larger flowers in the second or third row, instead of carrying out the three sizes complete, remembering the four corners are always the more striking when light. Again, it may be that light flowers are scarce; you must then substitute the brightest. Now whites, edged flowers, lilacs, and yellows, and even orange colours, may be fairly used as light. Next to these, bright scarlet may be so appropriated; but purples are all dark, and heavy crimsons; and even when a majority of dark flowers prevents us from doing as we wish, still a great deal may be done by uniformity of arrangement, not to have two dark ones together, except in the centre, nor two light ones. When they run too much of one character, there will be shades of difference to enable us to do something towards uniformity. A stand of twelve must be done in the same way, keeping the outsides in the top and bottom rows as light as we can, and the centres as dark as we can, and the middle row reversed. We are quite sure that uniformity in a stand is a strong point in its favour; and judges, if they do their duty, are bound to notice it so far that when two stands are equal in other respects, the stand properly arranged should have the benefit. Simple as this may seem, let any one go over a number of stands in an extensive show, and he will see more than half of them set up without the slightest attempt at arrangement, and many a stand of really good flowers spoiled by a total disregard to any

ind of contrast—one end of the stand, perhaps, with nearly all dark and the other light, or otherwise the effect spoiled by a bad disposition of the flowers.

NAME OF PLANT (Iago Clark).—What you forwarded was not a plant, as you supposed, but simply the fine fibrous roots of some plant—probably a grass—that had penetrated through one of the joints of the drain-pipes, and being constantly saturated with water made excessive fine thread-like growth. We once saw a well opened near to which a Lombardy Poplar was growing, and one of the roots had penetrated into the well, and there formed an extraordinary mass of fine fibrous roots, of a similar character to the instance sent by you.

If Mr James M'Millan will oblige a subscriber with the address of the house from which the woollen netting referred to in page 349 of your Journal can be obtained, and add such particulars as will enable him to order the exact description, he will confer a great boon.—C. Z.

MILDEW ON VINES (A Constant Reader).—When mildew makes its appearance in a vinery it spreads with great rapidity, unless checked at once by the application of flowers of sulphur to the affected parts, whether fruit or foliage. This done, keep in house dry, and increase the fire-heat, giving plenty of air at the same time. This parasite thrives best in a damp stagnant atmosphere, therefore give it a dry one, with plenty of circulation.

VEGETABLES FOR EXHIBITION (A Subscriber, Stirling Castle).—The best vegetables are of course the following: Potatoes, Peas, Cauliflowers, Artichokes, Scarlet Runner, and dwarf French Beans, Celery, Vegetable Marrows, Tomatoes, Leeks, Cabbage, Carrots, and Onions; and from these you may be able to furnish a good collection. Quality, and therefore fitness for table, is a great point with good judges—not mere size. “A basket or box of vegetables containing ten varieties” could include two or more varieties of Onions, or Peas, or Potatoes, in making up the sum of ten varieties, but it is always best to have ten distinct kinds, all of the very best quality. Add to quality cleanliness and a nice arrangement, showing you have judgment in selecting and taste in making the best possible display, and you will have done a good deal towards getting the first prize.

CULTIVATION OF THE CUCUMBER (Alma).—‘Moore on the Cucumber,’ ‘Ayres on the Cucumber,’ ‘Mills on the Cucumber,’ and ‘Cuthill on the Cucumber,’ are all very useful manuals, published in a cheap pamphlet form. Probably the two former are out of print, but the two last can be obtained through any bookseller. The price of each would be about 1s. or 1s. 6d. For the cultivation of “Winter Cucumbers,” see the volume of the ‘Gardener’ for 1868, page 385.

BRIDAL BOUQUET (Ulster).—The prevailing colour of a bride's bouquet should be white, with just a pale shade of violet or blue, or a light shade of pink sparingly distributed over the surface. A little scarlet can be used in a bridesmaid's bouquet, but not enough to make it glaring. As a general rule, far too much of scarlet is placed in bouquets during the bright summer months; there appears to be such a prevailing affection for scarlet, that our flower-gardens and bouquets are often rendered unsightly by such a glare of it. In winter-time, when the skies are dull and leaden, some scarlet should be used by way of giving life by contrast; in hot bright sunny weather the colours should be dark, sombre, and soft.

ROYAL VINEYARD GRAPE (Ulster).—Just as the fruit is ripening off, commence to keep the border and the atmosphere of the house as dry as possible, and admit plenty of air to the house, at the same time giving no water to the roots.

GUNNERSBY PARK, ACTON, W.—As will be seen in our notice of this place, Mr William Forsyth, who has filled the post of gardener to Baron Lionel de Rothschild, at Gunnersby, for the past twenty years, is about retiring from the active duties of his profession : he will be succeeded by Mr John Richards, for fourteen years gardener to Lord Londesborough, Grimston Park, Tadcaster, and recently gardener to E. J. Coleman, Esq., Stoke Park, Slough. The new gardener at Stoke Park will be Mr Reuben Budd, formerly with the Earl of Darnley, Cobham Hall, Gravesend.

METROPOLITAN SOCIETY FOR THE ENCOURAGEMENT OF FLOEBISTS' FLOWERS.—We have to remind our readers that the first exhibition of the Society takes place at the Crystal Palace, Sydenham, on Tuesday the 6th, and Wednesday the 7th of September next. Liberal prizes are offered for Dahlias, Hollyhocks, Gladioli, Asters, Verbenas, and Roses, and first-class certificates of merit will be given to Seedling Flowers worthy of such a high distinction. The Rev. H. H. Dombrain, Westwell Vicarage, Ashford, Kent, will give all requisite information.

NEW FRUITS.—The Fruit Committee of the Royal Horticultural Society have just awarded Mr J. R. Pearson, Chilwell Nurseries, Nottingham, first-class certificates for the following new Grapes: Chilwell White, a very promising seedling, which in size and form more resembles the Black Hamburg than any Grape in cultivation ; and the other, named Ferdinand de Lesseps, also a white Grape, which created some interest when exhibited last year, as being a remarkably successful cross between the American Strawberry Grape and the Royal Muscadine. It is exceedingly rich in flavour, and though not particularly a showy Grape, it well merits the award given to it, on account of its interesting pedigree, and as the means through which further novelties may be obtained. The opinions here expressed are extracted from the 'Gardeners' Chronicle.'

VINE-BORDER (A Constant Reader).—It will be advantageous to cover the Vine-border, so as to keep the roots dry. This can be done with tiffany or wooden shutters ; the last named is the best thing, as they can be made cheaply, and will last several seasons. Actually, the cost would not be much larger than for frigi-domo. The latter rots quickly, while the shutters are durable. The covering should be put on the Vine-border at the beginning of October.

CHARLOTTE ROTHSCHILD PINES.—At the meeting of the Royal Horticultural Society on the 17th of August, Mr J. Ward, gardener to Mr T. N. Miller, Esq., Bishop's-Stortford, exhibited four magnificent fruits of the above fine Pine, of the aggregate weight of 38 lb. They were remarkably even in size and shape, two of them as finely formed as if they had been cast in a mould. To these a special certificate was awarded. By the side of these was a collection of somewhat ordinary blooms of Dahlias, and these received the same award. A special certificate neither carries weight nor money value with it, and it is given to many things of questionable quality. The least the Society could have awarded these fine Pines was its gold medal. We certainly sympathise with Mr Ward in having such splendid examples of high-class cultivation borne down to the level of excellence of some medium-sized Dahlia blooms !

THE CATERPILLAR GOAT-MOTH (Charles Hull).—The only remedy for this is in killing the moth, which may be observed sitting near its cocoon protruding from the hole formed by the caterpillar, and destroying the caterpillars themselves by thrusting a wire up the holes, or filling the holes with tobacco smoke, or, as they do in America sometimes, with chloroform.

THE GARDENER.

OCTOBER 1870.

ON PRUNING SMALL-BUSH APPLE AND PEAR TREES.



CORRESPONDENT has by means of some queries placed this matter before us, and we have thought it of sufficient importance to lift it out of the ordinary space allotted to answers to correspondents, and give it a more prominent position. "A. E." asks for some brief instructions as to the shoot-pruning of small-bush Apple and Pear trees. He finds, as many others have found to their dismay, that gardeners differ very much about it; and while some advocate the constant nipping back of the hoots to two or three eyes all the summer, others state this plan, if closely followed, will not throw them into fruit-buds, but will cause them to make root, and then large gross shoots will be the result. The advocates of the last method find twice a-year to be enough, and recommend that it be done at the end of June and late in the autumn. Who wonders that amid this chaos of opinions "A. E." asks for some enlightenment?

Curiously enough, "A. E.'s" query comes just at a time when the question has been presented to ourselves in a practical form. We have in our garden, the soil of which is a dark stiff clayey loam, resting on a bed of London clay within 2 feet of the surface, certain pyramid and bush Apple and Pear trees, the former on the Paradise, the latter on the Quince stock. Planted in the autumn of 1865, all the trees have done well, and—the Pear-trees especially—made strong growth. The system of pruning pursued had been up to the present year that mentioned by "A. E." as the "nipping off the shoots to two or three eyes at short intervals during the summer." The trees bore slightly in 1867, and since then but only very sparingly indeed.

Regarding the Pears, there has been this season a good crop on Louis Bonne of Jersey; spare crops on Alexander Lambre, Easter Beurré, and Williams's Bon Chretien; and not a fruit on Beurré Diel and Duchesse d'Angoulême. It did appear that the constant pinching back of the shoots to two or three eyes caused the tree to make vigorous root-growth, and this reacted on the tree in the form of bringing out numbers of shoots all over it, while but very few fruit-buds were formed, or none at all. This season we altered the plan of pruning, and all the leading shoots have been allowed to make a free growth, but only one permitted to remain when two or three had issued from the same stem of a branch. All lateral growths were kept cut back to three or four eyes. The leading shoots have now perfected, and are maturing the summer growth; and by Christmas these will be cut back to five or more eyes, according as the pyramidal shape of the tree can be best secured. Each tree is now clothed with fruit-spurs, and plentiful crops next season may be fairly predicted.

Similarly as in the case of the Pears, the Apples were subjected to the same process of constant pinching back. King Pippin has yielded a fair crop; Early Margaret and Cox's Orange Pippin only a very few; Nelson's Glory, usually a free bearer, and some others, none at all. The same course of treatment as applied to the Pears this summer fell to the lot of the Apples. There is not a tree without fruiting spurs; and with but one exception, and that a bad situation, there is the promise of a very plentiful crop for another season. The drought notwithstanding—and the London district has suffered very severely from it—each Apple-tree has made a fine vigorous growth, to the manifest improvement of the plants in general. Hitherto the trees, both Pears and Apples, were continually making young wood till late in the season; now there is no appearance of young growth, nor has there been for the past month; and the growth of the summer, as presented in the unshortened main shoots, is ripening off admirably. Some bush Apples and Plums planted last November have been similarly treated, and though sorely tried by the drought, there is every appearance of abundant bloom.

Whether this mode of treatment will produce permanent effects of a character like those that now result, is as yet "not proven." Finding by the non-fruitfulness of the trees that the mode of pruning previously carried out was producing results of a totally different character to those wished for, we felt the urgent need for some modification of the pruning process; with what effect has been shown. Thinking the best way to answer our correspondent would be to lay before him our own experience, we have done so, and leave it with him. Should he be induced to follow it, or apply it in part, we shall be glad to learn

another season how his trees fared ; meanwhile some of our readers will perhaps give us their experience, and "A. E." and other inquirers the benefit of their advice. R. D.



NOTES OF THE MONTH.

ONE of the most notable incidents of the month is the fact of the Royal Horticultural Society having decided to go to the provinces alone in 1871. An influential meeting has been held at Nottingham—Lord Belper, the Lord-Lieutenant of the county of Notts, presiding—when it was resolved to invite the Royal Horticultural Society to hold a provincial exhibition in the county town during the summer of the ensuing year. We hail with lively satisfaction this decision of the Society. Scarcely does any other city or town present such an admirable field for its operations as does Nottingham. There horticultural enterprise is not only active, but highly successful. It is said that there are 20,000 allotment gardens in the suburbs of the town, and those who till them are among the flower of the artisan classes. Besides these, there are in the suburbs of the town, and further away in the county, many places where plant and fruit growing is followed with the best results, and these will be sure to furnish many subjects at the coming exhibition.

Already a committee is at work, organising a guarantee fund and obtaining donations of special prizes. This shows a thorough heartiness that augurs well for the success of the show. In all matters of public importance Nottingham has been in the habit of speaking out thoroughly and working energetically, and the Royal Horticultural Society could not have done a better thing than yielded to the request which came to them from thence.

It is to be hoped that the Local Committee will be allowed considerable freedom of action, which they can exert without perilling the independence of the Council. Probably such an influential committee has never before co-operated with the Society on the occasion of a provincial show. As the Society takes a new course, it would be well if the Committee would embrace a broader scope of action than has yet fallen to the lot of a provincial aid of this character. There is one thing especially which it can and should take cognisance of. Many horticulturists, and especially the gardener class whose means are limited, are deterred from visiting these meetings in consequence of the expense incurred in finding accommodation. A bed at 5s. or 7s. 6d. per night is too much of a good thing : let the Committee

grapple with this evil, and arrange a register of lodgings at reasonable charges. Let it also endeavour to utilise the element of practical gardening attracted to these shows. There should be something more than an expensive hotel in which to meet, with nothing but tippling and talk for the evening's amusement: the former is injurious, the latter mainly unprofitable. A public room should be engaged as a rendezvous, where dinner and tea at least can be obtained, and something less inebriating than spirits enjoyed. The charges for these should be arranged on a moderate scale. For those inclined to discuss, there should be a room provided; those inclined to a quiet chat over a glass of toddy should have their place of meeting also. If it was desired to hold a Gardeners' Congress, as has been suggested, to discuss their position, pay, and prospects, those advocating it could make their arrangements beforehand, and hold it at this public meeting-place. There should be a popular horticultural dinner, where all can meet; and while the jovial element need not be altogether overlooked, speakers who can talk common-sense and say something worth being listened to should be selected to lead the proceedings of the evening. The Horticultural Congress could also be held, and the arrangements of this might be kept solely, as before, in the hands of the Royal Horticultural Society. What is wanted is that a gardener may be able to go to Nottingham and live and enjoy himself there for three days for the cost hitherto incurred for one night's sojourn at Bury St Edmunds, Leicester, Manchester, or Oxford. This great advantage secured, the next question is, How can he best dispose of himself when there? These and other details are within the scope of a committee, and we should like to see some of the suggestions herein made, as well as those put forward by others, considered, and as far as possible given effect to. All the separate atoms of individual force, feeling, desire, and regard, want crystallising into one mass of sociality and fraternal intercourse: in such an attempt as that lies worthy work for a provincial committee.

In the new society formed for the purpose of encouraging the growth of florists' flowers, we recognise an agency by which a new impetus will be given to the cultivation of many of the popular flowers specially regarded by the florist. Its first exhibition was a decided success; and its supporters, pleased with such a result to their labours, promised increased aid in the time to come. Among others, Mr Keynes of Salisbury has given the sum of £7 for the best twelve Dahlias of 1870-71, to be shown at the autumn exhibition of the Society next year. This is a gleam of that fine enthusiasm that used to shine out years ago at the various large Dahlia exhibitions then held about the country. On this occasion exhibitors came from a long

distance. Scotland was worthily represented ; so was the far west of England. The Yorkshire contingent of Dahlia exhibitors mustered in strong force ; and many old exhibitors, whose experiences must date back hard on half a century, were competing, or if not competing, came to see and support. The Society proposes, should sufficient means come to hand, to give prizes for Tulips, Ranunculuses, Auriculas, Pansies, Pinks, Carnations, and Picotees, &c., at such of the early spring and summer shows as may be held at the proper season for such flowers. Practically it aims to supplement other schedules by providing classes for flowers overlooked partially, if not wholly, in the present day. Thus, without attaching itself to any particular society or place, it desires to give its meed of support to all florists' flowers as occasion may serve. After the show at the Crystal Palace, there was a dinner-party of the supporters of the new movement ; but it was nearly as heavy as a funeral party, and scarcely more lively than a state banquet. The dinner was bad for the price charged ; the wines indifferent ; the after-dinner talk, with one or two exceptions, feeble. The Society dined as if wearied with its day's work, and it rose from its dinner dull and heavy. Perhaps, as some said, its social intercourse was overweighted with the article of divinity, and lacked vivacity in consequence. Still it was a first attempt, and the second will no doubt be an improvement on the first.

The drought of the past three seasons appears to be awakening in the breasts of scientific men a fear that it may come to denote a decline of the rainfall in England, and consequently to the expression of weighty counsels as to the imperative necessity for conserving as much as possible waste waters for the irrigation of cultivated lands in seasons of drought. Anent this matter the 'Architect' gives expression to the following :—

“Is there no cause for fear that similar influences may be at work in England which will ultimately reduce the amount of rainfall, and lead to such a change of climate and season as may seriously affect our prosperity and powers of production? Two causes at least are at work tending to cause an inordinate waste of our water supplies, which may perhaps in their turn influence in some manner our annual rainfall. We do not say that such is the case merely because the past has been an exceptionally dry season ; but as similar seasons may occur again, it behoves us to see in what manner their ill effects may best be guarded against. This subject must be considered under two heads—viz., deep-soil drainage, and what is generally known as water conservancy. The one applies to country and the other to town districts. Although we have not, perhaps, been so improvident with our forest-lands as to denude the country of trees to any dangerous extent, so as to seriously affect the supply of our rivers, as has been remarkable in other countries to which we have referred, yet it cannot be denied that a somewhat similar operation has for some years been gradually extending itself throughout England by the modern system of subsoil drainage, which in itself

has been found so beneficial in the cultivation of land. The inevitable effect of this has been to get rid of rainfall water from the soil in a more rapid manner than has been provided for by nature, and which, finding its way more rapidly into adjoining streams, tends equally with forest destruction to cause floods in our rivers at one time, and to lessen their supplies at another ; or, in other words, to destroy a balance of power provided by nature, and recklessly to waste one of her most precious gifts. With our present limited knowledge there appears but one means whereby this evil can be effectually remedied. It would be impossible to return now to the old system of farming ; neither would it be desirable, even were it practicable. Advancement cannot be checked, but it should be carried out systematically, and with due provision for the maintenance of an equilibrium of forces. In order to do this, the effluent water from cultivated lands must be conserved, and not permitted to run wastefully away ; and therefore reservoirs must be constructed in connection with the natural water-courses, from which the ordinary rainfall which does not enter deep into the land for the replenishment of springs may be made available for irrigation, and for the better supply of towns and villages with water for drinking and purposes of sewage conservancy."

A few weeks since, Mr George F. Wilson, F.R.S., exhibited the true form of the Japanese *Lilium speciosum*, subsequently known as *L. lancifolium*. The flowers of this one were richly coloured, but the petals were distinctly margined with white, and the edges were not run into by the deep colour spread over the centres of the flowers. The 'Gardeners' Chronicle' has supplied some information respecting this Lily, of a highly interesting character, which we transfer into our columns.

"The cultivators of Lilies—and we are glad to think they are increasing in number—owe their thanks to Mr Wilson for directing their attention to the true *Lilium speciosum*, sometimes known as *lancifolium*, of which he has on two separate occasions shown well-flowered specimens at the meetings at South Kensington. This Lily is occasionally met with under the name of *cruentum*, and is very far superior to the dark-coloured varieties usually seen cultivated under the names of *lancifolium*, *rubrum*, *atrosanguineum*, &c., all of which are apparently seedling forms, raised either in this country or on the Continent, and which, we suppose on account of their greater prolificacy, have gradually usurped in most collections the place which belongs rightfully to the variety which Mr Wilson has again brought into notice. The characteristics of this Lily are the following : A stature somewhat below the average ; the flower-buds considerably shorter than ordinary, and consequently broader petals or perianth segments ; more perfectly and evenly recurved, and consequently neater-looking flowers ; a distinct white margin and tips, more apparent on the petaline segments—the colours not being so much run together as in the ordinary forms ; very richly coloured spotting, and a somewhat later period of flowering. When seen there is no mistaking the plant, which at once asserts its pre-eminence over the long-petaled irregularly-recurving forms commonly seen grown in its place. Since the plants above alluded to were exhibited, we have met with collateral evidence, supporting Mr Wilson's conclusion as to this finer variety being the form originally introduced from Japan. In one of the secluded bays of the Knaphill Nursery, the home of so many choice old plants, is a bed of Japan Lilies, a large

group of which was pointed out to us as being the original *L. speciosum*, grown on from the original stock, which has never been lost. On examining the flowers, we found they had all the characteristics of Mr Wilson's plants, and we have therefore now no doubt upon two points, that the Lily in question is the best of all the forms of *speciosum*, and that it is not beyond the reach of those who wish to obtain it.



NOTES ON HARDY HERBACEOUS PLANTS.

VIOLACEÆ.

(Continued from page 405.)

V. odorata—*Sweet Violet*.—It would be superfluous to describe this universally known and cherished plant. In one or more of its varieties it is to be seen in every garden, large or small; all love it, and well they may, for its modest beauty and sweetness are unrivalled. The immense demand for it about the large cities, such as London, Manchester, and Liverpool, throughout the spring, has rendered its culture a profitable branch of market-gardening, and acres of Violets are to be met with in the neighbourhood of such places: and the gardener in private establishments must have a long season of Violets by whatever means, or he fails to please the ladies by a good many points; for Violets, in season and out of season, are indispensable in many establishments. The Sweet Violet is a British plant, common in many parts in hedgerows, open woods, and pastures, and very generally affecting clayey districts; while in many widespread parts, where the soil is gravelly, or hot and dry, it is rarely if ever seen. The plant, in fact, prefers moderate shade and considerable moisture, and strong rich loam to grow in; and the nearer we can attain to these conditions in cultivation, the greater will be our success.

Many have written on the culture of the Violet, and the writers have by no means been harmonious in the practice they inculcated, though each has stoutly enough maintained that his, and his only, was correct and likely to be attended with success—as indeed it may really have been in his circumstances, but not therefore the best for one differently situated as regards climate, soil, and choice of aspect. A moderately heavy rich soil is that in which they thrive best, and sustain the most continuous and abundant bloom; and if the natural soil is in any point short of this, the best means at command should be adopted to bring it up to the desired condition. If it is light and gravelly, clay and manure should be added to it, in requisite quantity; or if a poor hard clay, sharp gritty matter, with no stint of old manure, would be the proper correctives. As regards the aspect of the spot on which they

are to be grown, it is a point of some importance, especially if no natural means of affording the plants a little shade are available. Whether it is open to the east, the west, or the south, is of less importance than the necessity of placing them where they will enjoy slight shade either in the morning or afternoon. My own experience is most favourable to placing them on a west border, where they will be sheltered from the rays of the sun during the earlier hours of the day. It is well, however, to have the stock designed to bloom out of doors, growing in different aspects, as by that means there will be less danger, in exceptional seasons, of total failure. A very important point in their culture, by the practice of which I have always been rewarded with good results, is to lift and divide the plants annually, cutting away all old and weak crowns and runners and trimming the roots, trenching and manuring the ground, and replanting them. The best time for doing this is immediately after the flowers are over, about the middle or end of April or the beginning of May. It is bad practice to leave them undisturbed for several years in the same place; the ground becomes exhausted, and the plants too; and it is always difficult, often impossible, to get a vigorous stock from plants so treated. The Neapolitan, a more tender variety of the Sweet Violet, is best adapted for culture in pots, to be sheltered in cold frames, in a sunny airy place in winter, or forced according to requirements. These may be grown planted out in rich ground in the same way as the others till September, when they may be lifted and potted or planted in frames closely, and afterwards merely protected from severe frost, and kept well aired in all open weather. Of course, if they are intended to be placed about rooms, they must be put in pots at the time they are removed from the open air, and they may be forced in mild bottom-heat with much more convenience if the plants are in pots than if they are planted out in frames. All the varieties are easily increased by cuttings made of the stout short runners, rejecting all that are wiry and hard; and they should not be taken off plants that have been forced, as these are deficient in vigour. Plant them in rich fibrous very sandy soil, in a frame facing northwards; keep them close till they begin to grow, then give air, a little at first, gradually increasing it till the lights may be dispensed with wholly till the return of winter, when they will require to be put on, and the plants protected during frost. In the beginning of April they must be planted out, and everything possible done to encourage vigorous growth, on which depend the quality and quantity of bloom more than anything else. Some raise their stock from seeds sown annually; and it is a good plan, but more troublesome in the matter of attention, and requiring more labour, than either division or cuttings, while the result in bloom is nothing

superior. Among the varieties of Sweet Violets, the Czar, the King, and Giant are the largest flowers and stoutest stalks, and are consequently best for cutting; but I have not found either superior to the common Russia, in single or double flowers, for continuous and sustained bloom, while nothing surpasses the Neapolitan for forcing.

V. palmata—*Palmate-leaved Violet*.—This is a very rare plant in gardens, and a very distinct species. It grows about 6 inches high, in rather tufted fashion, with palmated or five-lobed coarsely-toothed hairy leaves, and rather large purple flowers on stout short stalks. Native of North America. Best adapted for culture on rockwork, in deep rich gritty loam, in shade. Flowers in late spring and early summer.

V. Pedata—*Birdfoot Violet*.—This is related to the last, but is even a finer species, and about as rare. It grows about the same height, and is very compact and neat in its style. The leaves are cut into seven narrow lobes, the basal and the central ones usually deeply notched. The flowers are large, dark blue, carried well above the leaves on stout stalks. Best adapted for rockwork decoration in deep moist sandy soil, in shade. Native of North America. Flowers in late spring and early summer.

V. plumata—*Feather-leaved Violet*.—This is a south European species, with much of the habit of the two preceding. The leaves are broadly ovate in outline, and divided almost to the midrib, giving the appearance of a broadly pinnate leaf, and the divisions are notched at the point. The flowers are smaller than in either of the two preceding, nor are they thrown so high above the foliage, but they are rich dark violet, and in this respect they are superior to those of the others. It requires the same treatment in cultivation, and is adapted to the same purposes as *palmata* and *pedata*, and flowers about the same time.

V. pyrolæfolia—*Winter green-leaved Viola*, *syn. Viola lutea*.—This is a Patagonian species, and one of the handsomest of the family. It grows in tufted masses, producing bluntly egg-shaped leaves, with a heart-shaped base, toothed and hispid, as is every part of the plant outside the corolla, and inside also it is somewhat bearded. The flowers are large, bright yellow, on slender stalks, but raised considerably above the foliage; the lower petal is beautifully penciled with narrow dark red lines, suitable only for warm partially-shaded positions on rockwork or for pot-culture, and delights most in rich fibrous loam with a good allowance of grit in it.

V. tricolor—*Pansy or Heartsease*.—The garden varieties of the Pansy are so familiar and so much admired by everybody that they scarce require praise or description; the mere mention of their name

is sufficient recommendation. It is less of the finer florists' varieties or show sorts that I would speak than of the Fancy or Belgian and bedding ones. They will be found most useful for planting in the front line of the mixed border and on rockwork. The Fancies bloom very freely and for a long period if the soil is moist and rich ; and they present most novel and pretty colours and unions of colours. But for continuity of bloom and general decorative usefulness and hardiness all kinds of Pansies are eclipsed by the bedding sorts. The Cliveden blue and yellow were the first of the race to which general attention was drawn, but they are now rapidly increasing in numbers and in improvement, and no doubt will continue to do so for some time. The Pansy delights in strong rich loam with a little sand in it, and is most sustained in its bloom when shaded for some part of the day, and copious moisture can hardly be overdone in the growing season. *V. tricolor* is a native of Britain, and it is the reputed parent of all the races of Heartsease. Other European species, there are good grounds for believing, have had something to do with the origin of these favourite flowers ; but in the mixed and confused condition of the cultivated varieties now, it is impossible to determine with any accuracy their parentage, but the probability is that *tricolor* and *altaica* give rise to the Pansies between them.

The few species described above do not nearly exhaust the list of plants valuable for ornamental purposes comprised in the group. They are only a few of the best, and the following list contains others well worthy of cultivation in larger collections :—

<i>V. alpina</i> , 4 to 6 inches, dark purple.	<i>V. Canadensis</i> , 6 to 8 inches, pale blue.
" <i>amœna</i> , 4 inches, dark purple.	" <i>cucullata</i> , 6 inches, dark blue.
" <i>biflora</i> , 4 inches, yellow, in pairs interesting and pretty.	" <i>palmœnsis</i> , 4 inches, blue and white.
" <i>blanda</i> , 6 inches, white.	" <i>striata</i> , 6 inches, blue and white.



FANCY PELARGONIUMS.

THESE beautiful free-blooming forms of the *Pelargonium*, termed for some reason or the other "Fancy" varieties, are worthy of high admiration, both for the charming softness and delicacy of their tints of colour, and for their remarkable free-blooming properties. "It has been called the Ladies' *Pelargonium*, and well it deserves the name, seeing the profusion of many-coloured flowers it produces, varied as the colours in the rainbow, added to which its sweet foliage renders it indispensable in the formation of the bouquet." So wrote an admirer of the Fancy *Pelargonium* nearly twenty years ago, and what was


hen stated applies with added fitness now, seeing how much improvement has taken place in the past ten years in the way of producing variation in colour and increased size of the flowers. When we remember the flowers of this class of Pelargoniums, as they appeared twenty years since, with their narrow petals resembling the sails of a windmill, so deficient were they in form, and compare them with the exquisite symmetry of the flowers in the present day, we shall then clearly perceive what the florist has accomplished in his work of improvement. Time was when they were a weak and sickly race, requiring more than ordinary care in their management; but now, thanks to the enterprising exertions of the hybridiser, we have robust free-growing habits and free-blooming characters, which will bear the same treatment as the larger varieties. The Fancy Pelargonium is, in fact, a perpetual-flowering plant. If the trusses are taken off immediately the flowers have withered, and the plant be repotted, it will come into flower again in the course of a few weeks, and continue to bloom the whole of the winter, the assistance of a slight artificial heat being necessary at this season.

Our notes of the leading flowers give the following as a fine selection of eighteen Fancy Pelargoniums:—Acme (Turner), purplish maroon, with white throat and margin, and excellent grower; Belle of the Season (Turner), French-white, with distinct rosy spots on each petal, very pretty and good; Brightness (Turner), deep rosy crimson, clear white centre and edges, good habit; East Lynne (Turner), white ground, lower petals heavily marked with crimson purple, upper petals with bright crimson, very fine and distinct; Ellen Beck (Turner), delicate lilac carmine, with bright throat and edges, of dwarf robust habit, and very free blooming; Fanny Gair (Turner), rosy lake, suffused with purple, clear white throat and edges—a flower of exquisite shape and very fine; Lady Carrington (Turner), soft pale peach, top petals suffused with pale pink, white throat, very delicate and pretty; Lady Dorothy Nevill (Turner), pale rosy pink, white throat, and clear white edges, a charming variety; Leotard (Turner), extra fine in quality, bright cherry rose, with clear white throat and edges, remarkable for the great substance and smoothness of the flowers; Lord of the Isles (Turner), deep rosy purple, white throat and margin, fine free habit; Marmion (Turner), rich crimson top petals shaded with purple, clear white throat, and narrow edge of same, large and extra fine; Mrs Alfred Wigan (Turner), pink, with clear white centre and edges, pretty and very free; Mrs Dorling (Turner), lilac, mottled with rose, very soft and delicate, white throat and edges, form fine and habit free; Mrs Mendel (Turner), white, with delicate spots of rosy lilac, a charming light variety; Pink of Perfection (Turner), a charming shade of

bright soft pink, pale throat, very free and fine habit ; Princess Teck (Turner), one of the most exquisite varieties in cultivation, white, with carmine spots, very smooth, and a most profuse bloomer ; Sarah (Turner), deep crimson, suffused with purple, white throat ; and Vivandière (Turner), rich crimson, novel and distinct, and very free and striking. It will be observed that all the foregoing were seedlings raised by Mr Turner of Slough. A dozen older but very useful varieties would give Bridesmaid (Turner), Cloth of Silver (Henderson), Delicatum (Ambrose), Edgar (Turner), Evening Star (Henderson), Madame Sainton Dolby (Turner), Miss-in-her-Teens (Turner), Modestum (Turner), Roi des Fantaisies, Silver Mantle (Turner), Sylph (Turner), and Victor Hugo (Turner).

The Fancy Pelargonium has this advantage over the large flowering kinds, that it will stand almost any amount of heat, and open its flowers freely, if the plants are properly ripened for the process. But few cultivators, however, will require to do this. If a collection of plants be obtained from the nursery, and they had been packed in a basket to keep them from injury, it is advisable to place them in a warm house or close pit for a day or two previous to potting them, to induce a reaction of the roots, and restore the partly-bleached leaves to their proper condition. If a collection of varieties is to be worked up from cuttings, strong and healthy ones should be selected, which, when cut into lengths from 2 to 3 inches long, should be inserted round the edges of well-drained pots filled with a light compost, having at least one-third silver-sand mixed with it. As soon as the cuttings are rooted, pot them off into small pots, using a compost made up of sweet fibrous loam, with an admixture of rotten manure and sand, using plenty of drainage in the pots. As soon as the growth has reached 3 inches in length, pinch out the centre of each shoot, when they will be found to break right from the bottom of the plants, which should be kept rather dry during this process. As soon as the strength of the plants admits of it, tie out the side shoots, and shift them into larger pots as soon as they reach the outside of those in which they are growing. Pots from 6 to 8 inches in diameter are large enough for the final potting, but the size employed must be in accordance with the purpose for which the plants may be required.

Some special instructions are requisite in the case of plants intended for exhibition purposes. Actually, Fancy Pelargoniums may be grown to almost any size, by keeping the house in which they are making their growth moist and warm. Fancy Pelargoniums undoubtedly like warmth, but plenty of air should be given during the day, even supposing some fire-heat is being employed, and the specimen plants



ould have plenty of room. The outside branches should be kept ied out in order that the centre shoots may have all the light and ir possible. With every attention to tying out, however, the plants, rom their peculiar close habit of growth, are very apt to become rowded in the branches; then it is a good plan to thin out a few of he under leaves from the centre of the plants, which will lessen the endency to become drawn.

The experience of the most successful cultivators points to such a ompost as that formed of the following ingredients as the most suit- ble for specimen plants of Fancy Pelargoniums:—Equal parts turfy oam, peat, and well-decomposed cow and horse dung, adding silver- and freely. The pots should be well drained with charcoal and roken oyster-shells. Some cultivators mingle a little rough peat with their soil, and add also oyster-shells broken into small pieces. In potting, the Fancy kinds should be kept higher in the pot than the large flowering Pelargoniums; what is termed the “collar” of the plant should be level with the surface of the soil in which it is planted.

Great attention should be paid to watering. Better to have the plants too dry than too wet; the first can soon be remedied, the last scarcely at all. The roots of the Fancies, being of a much finer and more delicate character than those of the stronger-growing class, are seriously and speedily affected by an excess of moisture. In their culture, one very important point is often neglected—namely, cleanliness. There must not be either damp, mildew, or aphides suffered to accumulate. Either or all of these can be kept under by the use of timely precautions. Damp will bring mildew, and want of cleanliness will engender green-fly. There is no mystery whatever in producing the splendid specimens of Fancy Pelargoniums seen at the London exhibitions; attention to a few easily accomplished rules is all that is required, with a little watchful intelligence presiding over and directing their application.



ABOUT POTATOES.

“MANY of them of good size, but very coarse,” was the critical judgment lately passed upon a large collection of some fifty kinds of Potatoes that were staged at one of the meetings of the Royal Horticultural Society at South Kensington. This critique was just, but not sufficiently severe; for if it had proceeded to denounce in strong terms the far too prevalent practice of growing, and especially of staging for exhibition, the huge, ungainly, sunken-eyed, and altogether “coarse” samples of our noble tuber that some people seem to think the *ne plus ultra* of Potato culture, then would a service have been rendered to horticultural taste, and possibly our eyes might soon be rid of the sight of those ugly monstrosities

yclept "exhibition" Potatoes. I do protest against the Potato being put on a level with Mangold-wurzel as a show-root, making size the criterion by which to judge of its merits. Nay, even in judging Mangolds some respect is paid to shape and outline; but a Mangold, be it big or little, is but a Mangold still; whilst there are Potatoes and Potatoes, the difference being just this, that whilst some are fit to go upon the table of an epicure, others are only fit diet for the pigs. The difference may be but trifling, but it is enough that it exists. If I were philosophically inclined, I might profitably moralise over the strange taste for mere size that seems to prevail among horticulturists. We have nearly gone mad in the pursuit of it in some things, and now find we have committed a huge blunder.

Big plants have had their day, and are now rather pooh-poohed; big Cucumbers, also, are now looked upon as so much cattle-food by judges of taste; big Melons or other fruit must pass through the sharp ordeal of the flavour test; and so it is all through the piece. And now we have but to get rid of the strange anomaly of big Potatoes from our exhibition tables, and then we may well hope for the display in the future of such cultural results as shall both please the eye and delight the taste; and that such a reformation is near I have good reason to believe. Business pursuits took me a short time since to the classic regions of Oxford; and whilst there, how could I resist the temptation, so strong to me as a "potatoologist" (?), to drop in upon that celebrated cultivator Mr Robert Fenn of Woodstock, and get a look at what he was doing in the way of raising new varieties, as well as note the results of his mode of cultivation?

Mr Fenn is a strong advocate for what is known as the "ridge-and-trench system" of culture; and which system, however, simply means that the ground, having been well prepared and manured during the previous winter, the line is laid down at intervals of 3 feet apart, the sets are then placed in a row alongside of the line, and about 15 inches distant from each other in the rows, and then the soil is thrown up over the sets with the spade, burying them to the depth of about 6 inches. Of course no earthing-up is needed, and the trenches in between are at any time available for the planting out of winter crops. I had tried this mode of planting myself, on a dry soil, during the past summer, with but indifferent results—that is to say, I obtained no greater produce out of a line so planted than I did from a line planted on the old method, and therefore I did not esteem the mode of cultivation a desirable one to follow. Naturally I felt desirous to note how Mr Fenn's ridge-planted Potatoes turned out; so, when the inevitable refreshment had been partaken of, we turned out to the garden, he grasping his digging-fork with as much zest and fervour as a soldier would his beloved rifle, and I, note-book in hand, to mark in permanent characters the results. But first I must state, to my great joy, I found Potatoes were grown both upon the ridge and the flat system in the old rectory garden at Woodstock; and after a fair comparison of the produce, we concluded that nothing was gained by ridging, as the crop in each case was about equal in a given length of row. The advantages of the ridge system appear to be two—first, a saving of seed; second, greater convenience for putting out winter crops. The disadvantages are—first, more manual labour required in planting; second, a smaller crop from off a given space of ground. One thing, however, must not be forgotten. Mr Fenn grows solely for comparison, and not for his own consumption, a few of the coarse, rank-growing varieties, of which we have far too many. His study and endeavour has long been to obtain sorts that produce but a medium green growth, and of such is the bulk of his crop; so that the necessity does not really exist for wide spaces between the rows, as the ex-

pansion of root-fibres is pretty much regulated by haulm-growths. Hitherto, also, the grafting process had found in Mr Fenn a staunch believer—not necessarily, however, in its capacity to produce great or beneficial results, but rather in its capacity to produce changes; and as I have not previously scrupled to express my doubts as to results of any kind being obtained, the first thing to be done was to lift some roots of grafted samples, starting with Milky White, to show its natural character. We next lifted a root of the same variety grafted into a Fluke, and found the produce to be more rounded in form; there was a decided deviation both in shape and colour, the foliage also distinctly altered. Then followed Milky White grafted into Yorkshire Hero. Here the foliage presented a combination of both these kinds, but the tuber was decidedly indifferent.

Onwards, a handsome second early round of good quality was next raised, and was followed by the same variety grafted into Yorkshire Hero; that developed a later growth of foliage that was still green, and the tuber rather rougher and of coarser appearance, and showing no improvement. Yorkshire Hero grafted into Onwards exhibited no change whatever.

Here we held a conference to discuss and compare notes; and this was the result of our conclusions: He to retain his belief in grafting, but that it produced in the Potato no beneficial results; I to forego my hitherto utter incredulity, and to recognise the principle of Potato-grafting, but with the belief that for the production of improvement in sorts thereby it was worthless.

Thus far we had cleared out of our way two important points of difference, and now turned to the more congenial, but not less interesting, duty of lifting and making notes of the seedlings and more recent kinds. I think we started with the Old Lapstone, the parent of a numerous progeny. Why, I was quite startled this year to note in my large collection how many of the sorts developed the Lapstone foliage, a growth that, once seen, can at all times be recognised—upright, stiff, with rounded incurved leaves—a most desirable sort of haulm to get to a good variety; but I fear that betwixt the sorts that now yield this form of foliage there is rather too much of the tweedledum and tweedledee difference. Here are a few of them: Lapstone, Haigh's do., Huntingdon Kidney, Rixton Pippin, Lady Paget, Pebble White, Crystal Palace, Ashtop Fluke (how Ashtop?), Daintree's Kidney, Yorkshire Hero, and Beaconsfield Kidney, which latter Mr Fenn thinks, as I do, is just the old Pebble White, but having a rougher skin than the Lapstone. Mr Turner's other new variety, Union, is an early round that closely resembles Walker's seedling round in general features. The Waterloo Kidney as usual lifted a fine sample, and it is without exception one of the handsomest and best bred of the White Kidneys that we have.

Now we come to one of Mr Fenn's newest and choicest productions, the Rector of Woodstock, which is decidedly a good stock. It ranks as a second early, haulm of moderate growth, and turns out such handsome white round tubers, and (for we tasted them) of such excellent quality, that it must be pronounced in Potato circles a real acquisition. This Potato has been the result of most careful selection, as some dozens of seedlings, all of the same family, were lifted, and all good, but the Rector was the best; and we were thus enabled to sign and seal Mr Fenn's judgment, as well as that of the Fruit Committee of the Royal Horticultural Society, who last year awarded this variety a first-class certificate of merit. A fine seedling round, pink in colour, of handsome appearance and good cropper, is approved, and so is a handsome Red Kidney that is very promising. Then we come upon a batch of seedlings raised from that capital round variety Early Emperor, the pollen parent being Onwards, and lift a red round, much like the

Emperor parent, but does not run out like that variety. This seedling was ~~be~~ handsome and prolific. Next was a pink round, much the colour of the ~~Am~~ can Rose. It was rough in skin, early, and handsome, and is named ~~Eng~~lish Rose. This is a very promising kind also. A white round, with purple-blotched eyes, very handsome and promising, is next approved; and so is a peculiarly good-looking, rough-skinned red kidney, out of the same batch, that we dubbed Fenn's Bountiful, for it is a good cropper and a real beauty. The last selected of this breed is a strong-growing white round, having pink eyes, which is very handsome, and will make a superb exhibition variety. One more seedling was from a cross between Shutford seedling and Hogg's Coldstream. This was a fine white round that will by-and-by take a prominent place as a fine early. I think this is the one we dubbed, in a gallant spirit, Eliza Fenn, after Mr Fenn's kind and hospitable better-half. Mr Fenn grows altogether a large collection, having nearly all the best-known sorts that are in the market, and many of these also were looked over, but notes of them may well be left until some other time, when I may also embody with them mention of the results of my own trials. I must, however, not omit to bear witness to the great care and patient attention that Mr Fenn bestows upon the culture of his favourite esculent, as also upon the still more difficult duty of selection. A high appreciation of beauty in shape and outline rules his judgment; and so much did the handsome and almost perfect form of many of his new seedlings impress me, that when the next day, on passing through Reading, I looked in upon the show then being held, I became so shocked with a sight of many of the big, coarse, ugly Potato monstrosities there staged, as to have suffered for some time afterwards from Potato nightmare. I exhort people who will show Potatoes, in the future to have some regard for the outraged sensibilities of Potato critics.

Years ago, long before Moules's system of earth-closets had been unearthed, Mr Fenn put the system into operation at Woodstock. I saw his *modus operandi*, and can vouch for its simplicity, originality, and effectiveness. This is the source from which is obtained the manure that has for some years grown the Woodstock Potato, and capital stuff it is. The best time for its application is early in the winter, and then it becomes thoroughly incorporated with the soil. It, moreover, keeps the soil light and porous, and is altogether exempt from most of those objections that apply to other strong manures when used for potato-culture.

Mr Fenn has three specialties, in each of which he is well posted—viz., Potatoes, Bees, and British Wine-making. Of the first I have written; of the second, I can only say that his hives are of the best design, full of busy bees, and that his honey is delicious; and of the third—well, readers should see and taste for themselves who can. The fine old rectory-house has its entire front enveloped with Grape Vines that are bearing, goodness only knows how many bunches; but we saw that on one chimney only there must have been, at least, half a hundred-weight of fruit; and then there is a large portion of garden-wall also covered with Vines, and from the entire produce I suppose will soon be brewed wine enough to fill the large cellars under the rectory-house.

Some day or other, perhaps, the Potatoes, Bees, and Wines will make a noise, for Mr Fenn has a right to look forward for the fruits of his labours. May the kind geniality of disposition that so strongly permeates the character of our Woodstock friend always be his! and when once more he shall shoulder the fork and go forth to his annual Potato harvest, may I be there to see!

SOUTHERN.

NOTES ON LILIES.

THE varied beauty of form and colour in the many species comprised in the genus Lily, and the sweet fragrance which some of them possess, combine to make one wonder why they are not more generally seen in our gardens.

I can well remember the beauty of some kinds that were common in cottage gardens years ago—the elegant tall white *L. candidum*, the orange Lily (*L. aurantiacum*) so dear to northern Ireland, the Tiger Lily (*L. tigrinum*), the Turk's Cap (*L. martagon*), &c. These are all worth growing, but there are some kinds of more recent introduction which are equally hardy and easy of cultivation.

One section contains *L. longiflorum*, *L. eximium*, and *L. Takesima*, all dwarf-growing species and varieties, with large white bell-shaped flowers of exquisite odour. *L. longiflorum* is most common; *L. eximium*, when it can be obtained true, will be found to differ from it in having longer and more elegantly-shaped flowers; while *L. Takesima* is of a more robust habit, with black stems and larger flowers. An allied species is known as *L. Brownii* or *Japonicum verum*. This grows to about 4 feet, and has flowers of a creamy white shaded outside with dark brown. In my opinion it surpasses those previously mentioned in beauty.

Another section includes the varieties of *L. umbellatum*, sold under many different names, according to colour, which varies from pale citron to a rather dull crimson, plain or more or less spotted with darker colour. The flowers are bell-shaped, the odour scarcely perceptible, or slightly unpleasant.

In another section the flowers have the petals reflexed like the old Turk's Cap Lily, and this section contains species which vary much in their other characters. Among them are the following:—

L. tenuifolium, a small kind with slender leaves and scarlet flowers, very elegant.

L. Canadense or *superbum*, a plant of elegant habit, with pale orange flowers spotted with black.

L. excelsum, *L. testaceum*, and *L. carneum* are various names under which I have bought a Lily of very strong growth (about 5 feet in height) with buff flowers and crimson stamens. It is very hardy, and the bulbs increase rapidly. It is one of the finest of Lilies. I have not found it to be sweet-scented, as it is stated to be in some of the catalogues.

The varieties of *L. lancifolium* are well known for their beauty and sweetness; they do well in the open ground, as does *L. auratum*, which may now be procured at a moderate price.

L. tenuifolium flowers early in June, and from thence to September other kinds come into bloom, until the varieties of *L. lancifolium* wind up the season in September.

All except the very tall-growing kinds are well suited for growth in pots. When they require shifting into larger pots, the earth about the roots should only be partially removed, and the bulbs should not be allowed to get dry.

GEORGE D. BROWN.

EALING, W.



THE CULTIVATION OF HARDY FRUITS.

THE PEACH AND NECTARINE.

(Continued from page 400.)

I WILL take it for granted the cultivator has succeeded in his operation of either budding or grafting. If so, the young tree should make a good healthy shoot several feet long during the first season. The next object is to get the wood thoroughly ripened by exposure to light and air. At the pruning season, in winter or spring, the leader ought to be cut back to 12 or 14 inches from the ground in the case of a dwarf-trained tree, but in the case of a tree intended for a rider—which probably will have been worked at the desired height—it ought to be cut back to three eyes from whence it started. The after-management of either a dwarf or rider is much the same. The second year three shoots should be allowed to spring from the young tree, one from the centre to form a leader and one on either side to form the basis of a tree. The side-shoots may be elevated to an angle of 45° or thereabouts, so as to encourage their growth. These in their turn should be thoroughly ripened. In autumn the young tree would benefit much by a gentle root-pruning, which may be done any time after the middle or end of August. All strong watery roots should be amputated by a nice clean cut, the points of the other roots being trimmed back a little so as to encourage the formation of healthy-feeding roots. At the pruning season in winter, the leader, which has been formed during the summer, may be cut back to 4 or 6 inches from whence it started, while the side branches may be cut to any length from 1 to 1½ foot, according to the quality of the wood. I need not give further details regarding the after-pruning or training of the Peach and Nectarine; suffice it to say that the principal object to be aimed at is the regular filling up of the tree with young fruit-bearing wood. Nothing looks worse than to see a tree, either Peach or Nectarine, have the whole of its centre a blank devoid of

either leaves or fruit, while the extremities are crowded with both in order to make up for the deficiency elsewhere. This is no uncommon sight, however, and is simply the result of an injudicious handling of the knife at the pruning season. Let the cultivator do his best to keep a supply of wood near home, and the tree itself will make ample provision for the extremities without his assistance. The disbudding season is perhaps the period when the greatest mischief is done in this way. In performing this operation let the best back-buds remain to form shoots ; and if this one simple matter is attended to year after year, there will never be a lack of fruit-bearing wood regularly distributed all over the tree. Some cultivators have tried to grow peaches upon what I may call a semi-spur system, but as in every case the fruit of the Peach is produced upon the wood formed the previous year, I see many drawbacks to the method, and little or nothing in its favour. I would therefore never leave a spur, but, where the knife is used, would make a clean cut, removing the entire shoot. I consider another great error is committed by leaving too much wood. If the shoots are left at a distance of from 4 to 6 inches apart all over the tree, there will be less disbudding required in spring, while there will be plenty of wood to bear a crop, which will have a greater chance of getting well ripened than if the tree were crowded with foliage. Root-pruning should be regularly attended to every two or three years, and the probability is that by the time the tree is eight or ten years of age it will be in a regular fruit-bearing condition for life. As in the case of other fruit-trees so is it with the Peach—early autumn is the best time for performing this operation. From the middle of August till the end of September may be considered about the best season of the year. I would further recommend that the operation be performed much in the same way as already recommended for other fruits, and at the same time using the usual precautions for protecting the roots from drought, frost, or excessive rains. If such simple things as these get the attention they deserve, the cultivation of the Peach and Nectarine as hardy fruits is not such a difficult matter as some suppose it to be. The most difficult matter in their cultivation is the protection of the blossom and young fruit from the frosts of spring ; this being overcome, the greatest obstacle has been surmounted : but as it is my intention to speak more fully on this point hereafter, I will drop the subject for the present.

There can be no two opinions regarding the situation which is best suited for the Peach and Nectarine. A south exposure is the only one from which success may be looked for. I cannot deny but that I have seen good crops occasionally taken from other situations, yet

this is no argument why the best situation in the garden should not be given to the best of all our hardy fruits. A few points east or west of south will matter but little, but with this slight margin to work upon I claim the south aspect for the Peach.

In preparing borders for the reception of the Peach, my motto is, "Do it well, and the better it is done the more profitable will it be in the end." I am not a believer in that shortsighted economy which cannot see the practicability of spending a shilling to-day because there is no immediate certainty of having it returned with usury to-morrow. It savours too much of the slothful servant and the unused talent in the parable, and the gardener who does not do all in his power to have this operation well done is sowing for himself the first seeds of the want of success. The first thing to be observed when forming new borders is, that they be thoroughly well drained. Common tile-drains should run from the wall at distances of not more than 12 feet apart down to a main drain which should have enough of fall to carry off all superfluous moisture as rapidly as possible. These drains should not be more than $2\frac{1}{2}$ feet deep, and should be covered over with from 8 to 10 inches of broken bricks, stones, or suchlike, so as to leave from 20 inches to 2 feet for the soil of the border. This depth I consider quite enough; in fact, I believe that more success in Peach-growing has been accomplished with borders about this depth than when deeper. In this opinion I find most of our horticultural writers agreed.

I now come to the sort of soil that is best suited for the Peach. A light mellow loam is what has been found generally to suit best. In wet and cold localities I would be inclined to have a very light loam, yet one possessing a good deal of vegetable matter; and according to the nature of the climate and the amount of rainfall should I be inclined to vary the nature and texture of it. In very dry localities I would not object to a slightly adhesive loam, always choosing it if possible from good old pasture, and consequently possessing abundance of vegetable matter. Notwithstanding all this I would have no scruples in attempting the cultivation of the Peach in any ordinary soil, for it is my belief it does not depend so much upon the nature of the soil, provided it be not positively bad, as upon the proper construction of the border and the nature of the drainage. I say this for the encouragement of those who may not have a choice in the matter; but to those who may have this, I recommend a moderately heavy and rich alluvial soil, cut from an old pasture, and stacked for nine or twelve months before being used. If of this nature, the addition of a few bones and a little charcoal will be found beneficial; but if it is rather poor, I would recommend a slight addition of cow-dung

and above. Mr M'Intosh, in his 'Book of the Garden,' vol. ii. p. , has some very good and judicious remarks regarding the formation of peach-tree borders, and in addition to what I have stated, he says regarding aeration, "Thorough drainage is not only necessary to the care of the roots of the Peach and all other tender trees—and this more so as the situation is cold, late, or damp—but subterranean ventilation, or underground ventilation, is equally essential." I have never seen this put into practice, but in theory I like the idea very much. The simplest mode I know of accomplishing this is to place earthenware tiles in communication with the drains of the border and the surface covering the same. By placing these tiles perpendicularly so as to make regular communication with the air and the bottom of the border, placing one set along the bottom of the wall and the other at the front of the border near the walk, a regular and free circulation of air will be secured, which, I have no doubt, would prove highly beneficial to the cultivation of the Peach in localities where now its growth is regarded as almost impossible.

JAMES M'MILLAN.

(*To be continued.*)



GARDENING AT PINKIE HOUSE.

An Englishman rather enthusiastic in botanical research, I venture to state very much I am interested, in my yearly visit to Scotland, in what I find to be many gardens that come under my notice. Go where I will, I find either something new, or some old and valuable herbaceous plant under cultivation, or a general garden in a high state of order and beauty. I have, however, only visited one garden where all the requisites for complete study and enjoyment exist—viz., bedding-out plants, herbaceous, Alpine, and Ferns. Many of these are indeed a glorious display of colouring; the eye is pleased, the taste gratified, but the mind is dissatisfied. In visiting one, you visit all—the only variety is the transposition of the colouring. But where botany is really condensed, where the different classes or orders of plants are valued, where plants of the smallest sedum to the tallest herbaceous plant are to be found, there is a gratification of the mind with intense gratification and useful study. I might state how gratified I was at finding at Pinkie House all that I so much wished to see,—a most picturesque arrangement of bedding plants, with a background of fine timber; a large assortment of herbaceous plants, about 300 varieties; an interesting collection of Alpines, and a very fine collection of ferns, these latter numbering at least 300 hardy varieties, all of which had survived during the last winter. Some of the specimens are in great number, especially the Polystichums. There was also one very pleasing feature in this garden—it is not kept up at a very heavy expense. Many of the show gardens require a large staff and a heavy outlay, but here all is

produced in a very moderate scale of expense. Ferns do not appear to me to be nearly so much cultivated in Scotland as in England. It may be that it is a more common plant here, and not considered so worthy of a place in the garden; but the varieties are so increased, and the cultivation so much better understood, that they are to many of the deepest interest. Formerly there were not more than 100 varieties, now there are more than 1000. Many, however, that are styled varieties are so little removed from the form and appearance of the mother plant that they are hardly worthy the trouble of cultivation.

FILIX-MAR.



HINTS FOR AMATEURS.—OCTOBER.

DURING the past season we have read and heard much of drought, mildew, and failures among many of the principal garden crops—such as Peas, Cauliflowers, Turnips, Spinach, &c. Where manure is scarce, and ground light and shallow, such failures are almost certain; and as a help to meet such difficulties in future, everything should be done during the next few months to secure deep tilth. Harvest all waste vegetation, collect soil, road-scrappings, leaves, parings of walks or road-edges, &c., which make excellent dressing, especially if all liquids from the washing-house and elsewhere have been thrown over the heap. There is still great waste in villages and cottage dwellings of valuable material, which might have done much during a season even like the past to secure good vegetables, as well as keeping impurities within proper limits. Trenching will soon require attention, and that may be done deeply, and the effect will tell favourably on the crops. Where soil may be rich and rather heavy, light sandy earth will be of great advantage to it. Last season we had large quantities of soil at our disposal from Vine and Peach borders. It was spread on vacant ground instead of manure, and well incorporated with the ground in process of trenching (which was three spades deep), and the effect was excellent. We never had finer crops, except Cauliflowers, supplies of which, after the first plantation, were only kept up by frequently planting successions, thus taking up more ground than we could afford; but as each lot was about its best, Spinach or Turnips were sown, which filled up the ground, and were soon ready for use after the Cauliflowers were cleared off. From the benefit we have had by sowing and planting under the shade of tall fruit-bushes and Raspberries, we believe that much more might be done with dwarf fruit-trees for shade than is generally admitted. Single rows of Jerusalem Artichokes, Scarlet-Runners, and tall-growing Peas are always useful for shading some

kinds of vegetables; and where plenty of water is not to be had, it is necessary to strike out of the beaten track if regular supplies of crisp produce are wanted. The system adopted by Mr Speed of Chatsworth, to secure supplies of rain-water at once, tells its own tale of usefulness. There are few gardens where it, to some extent, cannot be put in practice; and the drought which this island has been subject to for some years past suggests to us that waste surface-water might be turned to much better account than it is. It is an old plan to have carriage-roads, walks, lawns, gardens, &c., drained and led into one or two large tanks for watering plants, &c., but this falls far short of having cisterns in convenient positions to water growing crops of fruit and vegetables. Lifting of roots—such as Carrots, Beet, and Parsnips—will now require attention. The two former, lifted and allowed to become rather dry on the ground, then placed under cover compactly together, and a covering of dry straw over them, will keep them well. Pitting them in a dry position answers well enough when the quantity is bulky. Parsnips keep well in the ground, taking up a few in open weather to keep up the supply as required. Potatoes should not be stored in large quantities while they are wet, as many would rot. Lettuce and Endive may soon be lifted and placed in frames, or where shutters can be placed over to throw off heavy rain and keep out frost. If they are not sufficiently blanched, tying up the heads or placing a board or slate over the Endive will soon make it fit for use. Cauliflowers under protection, and small Lettuces, should have sifted coal-ashes and a little lime spread through among the plants to dislodge slugs, &c. Where glass is used, the covers should be off at all times except when rain or frost prevails. Spinach for winter supplies, and young Onions, may have a little lime thrown between the drills to keep the worms from throwing out the young plants. Asparagus may be cleaned, cutting off all decayed stems. It is a common practice to put a layer of decayed manure over the roots, but in damp localities, where the crowns do not ripen, the manure helps to destroy them, and often good crops are lost. Where there is danger from damp, it is a good practice to place the soil over the crowns in ridges, forking in what manure is necessary before growth commences. French Beans in full bearing may be protected from frost by hoops and mats, or if a frame can be placed over a few rows, pickings may be had for some time after the main crops are destroyed. In a sunk pit we have a fine lot coming into bearing: wooden shutters are placed over them at night. Tomatoes cover the back, which also may be kept on late in the season. Cucumbers in frames depending for heat from linings may now require close attention, keeping the heat as steady as possible, cutting out any leaves which are decaying,

preventing crowding of shoots, and giving water only when absolutely necessary. Mushroom beds may be made where droppings can be had from the stables: a little straw mixed with them is not objectionable: turfy loam helps to keep the heat long in the bed. The manure requires to be moderately dried before it is used, and not allowed to evaporate the virtue out of it. Burning of the material by letting it lie in heaps must be strictly avoided. Use a layer of manure about 15 inches or less in depth, thoroughly beaten firm, and when the heat stands about 75° to 85° , the spawn (after being broken up in pieces the size of hen eggs) may be placed regularly over the bed about 9 inches or more apart, and 1 or 2 inches below the surface. When it is certain that the bed will not heat violently, let it be beaten with the back of a shovel, and 2 inches of good healthy loam placed over and made firm and smooth. The bed may then be covered with an old mat or dry hay, and if all is right the Mushrooms will appear in the course of five to eight weeks, according to the heat of the bed. Water need not be given till the Mushrooms appear, and then it should be tepid, and the soil only moistened.

Fruit-gathering will now require attention: if any are allowed to fall on the hard ground and be bruised, they should be kept separate from those which are to be stored for keeping late. When placed in the store-room, plenty of air should be admitted for a week or two, then the structure may be kept close and dark. When fruit-trees are to be planted, let the pits be made wide, and, if it can be had, a quantity of fresh loam placed in with the roots. If there are any broken roots, let them be cut clean below the break; if any are long and naked, they may be cut well back, so that plenty of fibre may be thrown out. When planting, place the roots on the level of the surrounding soil, and add 8 or 10 inches over them. Stake the tree firmly, if it is a standard, so that it will not move the roots by the force of wind: a quantity of litter placed over the whole is necessary to keep out frost. If planting is done against walls, the stems of the trees should be kept 8 inches or so off the walls, so that in the course of time they may have room to grow. Fruit-trees when planted in firm soil make sturdy growth, and come more quickly into bearing. Concrete placed in the bottoms of the pits, 2 or 3 feet wide, will cause the roots to turn outwards; and when root-pruning may be necessary, it is easily performed without the necessity of lifting the tree. If trees are to be chosen at the nurseries, those which have been often cut back and have been pruned, with pieces of wood left on, which are known by knife-men as "snags," should not be accepted as a gift, as disease is almost certain to lay hold of them. This hint is most applicable to Peaches, Apricots, and Cherries. It is well to ascertain what kinds of fruits suit the

locality before a purchase is made. Apples, Pears, and Plums may be had as "maidens," or with first season's growth, and planted as cordons on vacant spaces on walls. No portion of wall or fence should remain uncovered; plant against it either fruit-trees or Roses, &c. Some Apples we have used for this purpose, below larger fruit-trees, produced fine high-coloured fruit, especially Ribston Pippin, and Margil, which do little good here as ordinary standards. It is soon enough to begin pruning; but if any cuttings of Currants or Gooseberries are to be saved, it would be well to select them in time, as, when left to be picked up after the general pruning, the different kinds are liable to become mixed. Tie them in bundles and stick them in the ground till wanted, and the making of them may have attention on a wet day.

Plants to be kept under glass during the winter should now be examined, putting the drainage to rights, surfacing with fresh soil, washing the pots, or anything that is necessary, before arranging them in their winter-quarters. Cinerarias, Primulas, and similar plants, should be placed near the glass, where no drip can reach them, and where plenty of fresh air can be admitted. Frost may now be expected, and all bedding-plants of value should be lifted and placed under protection. Chrysanthemums coming into flower may be liberally supplied with manure-water, turning them round to the light. Get all bulbs potted or planted as formerly advised: those under cover should have timely attention before they grow under the covering. Plants for forcing, such as Skimmias, Lilacs, Roses, Deutzias, &c., should be under cover soon, and not exposed to much frost. Cleanliness, fresh air, and careful watering, should now be the order of the day for plants under glass.

M. T.



LAPAGERIA ROSEA.

I HAVE now under my care, growing in a cool conservatory, and gradually covering a good portion of the roof, a plant of this fine greenhouse twiner. It came into my hands in 1865, and was then a plant about 18 inches in height, growing in a 48-pot. I planted it at the south-west corner of the conservatory, in a spot which gets some shade at the latter part of the day; and to receive the roots, I made a small pit or tank, about 3 feet in length by 1 foot in width, and edged it with stone. The pit was made about 18 inches in depth, and one-third of it filled with brick-rubble for drainage. The Lapageria was then planted in some bog-peat, as spongy as I could get it, with which was mingled some rough sand. It soon began to grow, and flowered for the first time in 1868; since then it has bloomed yearly; and as the plant increases in size and strength, the flowers not only become more numerous, but larger and of finer quality.

My mode of treatment is as simple as it appears to be effectual. During the summer, at the growing season, I water plentifully; during the winter, when at rest, it is watered only occasionally—just enough to keep the soil moist. Occasionally I top-dress the plant with peat and sand as required; the constant watering during summer tends to wash away the soil from the roots. It is well to thoroughly top-dress at the beginning of winter, just as the summer supply of water is withheld; then the newly-added soil gets pretty well settled about the roots by the time growth commences in the spring.

I get a supply of flowers about nine months in the year; and it seeds freely, some of the pods hanging on the plant for a considerable time. The plant makes vigorous growth, and during the past summer has made shoots 16 feet in length. It has been in robust health, and made wood freely.

I find it necessary to shield the young growing shoots from the attacks of woodlice and snails or slugs. These young shoots come up through the ground of a character similar to those of the Asparagus; and as soon as there is a slug or a woodlouse in the house, it will find its way to it, and eat away the tip of the shoots. If this happens, the growth of the shoot is checked directly, and it rarely if ever starts again. As soon as I perceive a shoot coming through the soil, I place a lamp-glass over it, and keep it there till it has made sufficient growth to be out of reach of the foes.

I think a very pretty effect could be secured by blending the white with the rose-coloured variety in the interior of the roof of a suitable house. At present the former is very scarce and expensive; when it becomes cheaper, it will no doubt be grown as much as the other and older form. GEORGE VENNER.

THE GROVE GARDENS, HANWELL.



ON COLOUR IN THE TREE SCENERY OF OUR GARDENS, PARKS, AND LANDSCAPES.

(Read before the Horticultural Congress at Oxford, July 21, 1870.)

LAST year I had the privilege of reading a paper at the Manchester Congress of this Society "On the Improvement of Races," which subject may be said properly to belong to the "science" of gardening. To-day I have the pleasure of submitting to you my thoughts "On Colour in the Tree Scenery of our Gardens, Parks, and Landscapes;" and here I find myself dealing more directly with the "art" of gardening. While fully recognising the progress both in the art and science of gardening which has taken place in my day, I yet think that in this outlying but important province our professors have not made so free and effective a use as they might have done of the various tints of foliage which are to be found amongst trees and shrubs. Lest I should be misunderstood, permit me to state at the outset, that I hold the prevailing green with which the earth is clothed to be the best colour that could have been devised for the purpose, as blue is the most appropriate colour for the sky. But the sky, which is beyond our reach and power, is naturally subject to constant and considerable variation, and is singularly free from monotony. It is not altogether, or long together, of one colour. There are light fleecy clouds continually breaking up the hemisphere of blue; varying in substance and colour; sometimes hanging motionless,

but oftener sailing noiselessly along, more or less rapidly, and every moment changing in form. Then there are the dark thunderclouds, and the golden, silvery, purple, and roseate hues, which often give both life and brilliancy to the morning and evening sky.

But we have the power given unto us to vary and adorn the surface of the earth, and I would here invite public attention, and invoke the artist's aid in behalf of colour. There appears to me a monotony on the face of our English landscapes arising from one uniform and all-pervading colour—green. This monotony I would seek to remove by the introduction of trees with purple, white, and yellow leaves. With the same end in view, I would also plant more freely the transitory red, yellow, brown, and purple tints of spring and autumn, supplementing these effects by the introduction of berry-bearing trees—trees with white, red, black, and yellow berries, and trees with white, red, and yellow bark for winter ornament. With these preliminary remarks I shall endeavour to show, 1st, that the object I seek is desirable; next, that it is attainable; and shall conclude with a few general remarks and brief examples in support of my views. I am free to confess that there is nothing in the whole range of nature which yields me more pleasure than the contemplation of a beautiful landscape. To stand on some elevated spot in the English or Scotch lake district, for example, and look down on a broad and varied expanse of country; to row upon the surface of the lake, and look upwards upon the towering masses of rock and tree; to trace the lake shores, the lake islets and waterfalls, is, I believe, a recreation of a highly intellectual and more æsthetic order than the many who have not practised it might at first sight take it to be.

A highly-cultivated American gentleman once said to me: "England is a series of varied and improved landscapes. Now and then in remote districts one catches a glimpse of nature, unaided and adorned; but generally throughout the length and breadth of the land high art has been so skilfully applied as to effect the artist's object without leaving behind any traces of the artist's hand. But I miss the brilliant autumnal glow of the American forests: your landscapes lack colour." This very nearly expresses my ideas of English scenery; the natural beauties of our landscapes have in many cases been improved or developed at a sufficiently distant date, that the old and the new have become blended in one harmonious whole, leaving no strong lines of demarcation between the work of nature and the work of art; but the landscapes are generally cold and monotonous—wanting in variety and colour.

If we proceed to analyse a beautiful English landscape we shall find it composed of diversity of surface, light and shade, wood, water, rock, and many minor accessories, which may or may not be present, either singly or in combination. These I mention not to dwell upon, but to dismiss, as the recognised features of the landscape. My business at present is with tree scenery, and principally with one feature of it—colour. Our earth-tints are prominently neutral, often sombre; and to correct this should, in my judgment, be a leading idea with the true artist in landscape-gardening. A piece of country, however beautiful by nature—a garden, however perfectly planned—yields more or less pleasure according to the skill and taste exercised in the planting; just as the proportions and beauty of the human form are improved or otherwise by the style of dress—trees, shrubs, and flowers constituting, in fact, the exterior dress of the garden and the landscape. Now it must be patent to those even who are but slightly acquainted with this subject, that the labours of our plant-collectors abroad and plant-cultivators at home have placed within our reach many trees with coloured leaves—purple, yellow, and white—of various shades, and I hold that these

colours should be so blended with the prevailing green as to remove the monotony which at present obtains. That the effect of colour in the landscape would be generally appreciated, was once brought home to me in a peculiar manner. I was riding in company with some friends through the park at Chatsworth, in Derbyshire. Suddenly we sighted a tree with reddish-brown leaves rising from the greensward, and surrounded at some little distance with the usual green trees. Remote as it was, we could not at the moment make it out, but all admired it, and agreed that it was at once telling and beautiful. Led by admiration as much as by curiosity, we approached it, and discovered a dead tree retaining its reddish-brown withered leaves.

I think that any cultivated observer who may dwell ever so briefly on the tree scenery of Great Britain, will admit that the contrasts of colour, weak and little varied as they generally are, present to him one of its most pleasing features. If, then, the slight existing variation of colour, restricted principally to the contrast between light and dark green, is admitted to be an element of beauty, may we not justly infer that we should gain something if we varied and increased the contrasts by the use of stronger and more distinct colours? I think, then, that I may fairly assume that, on a free and full consideration of this subject, it will be generally admitted that a greater variety of colour would be an improvement in the tree scenery of our English gardens, parks, and landscapes.

I have next to show that the object I seek is attainable. The arrangement of the colours of flowers in the flower-garden has of late years been worked out with wonderful skill and effect. What were our flower-gardens in this respect thirty years ago? I remember that results predicted then were considered impossible by the many, although they have been accomplished, and more than accomplished, long ago. Now, as far as I am aware, no one has yet applied the same principles in the arrangement of trees and shrubs with coloured leaves. I have been told that it cannot be done. But after a long study of the question and numerous experiments, I have come to a different conclusion, which I submit with all deference to those who think otherwise. I believe that here, as in the flower-garden, there only needs a beginning, and progress will be rapid and success certain.

Many years ago I formed a collection of pictorial trees and shrubs, and planted them closely together, with the view of watching their development and eradicating those kinds which might prove undesirable on more mature acquaintance. This plan I vigorously pursued, and now find myself in possession of a select list, which I believe is sufficient to carry out all that I shall advance.

In addition to the ordinary or prevailing green, I find that I have five colours, or tones of colour, with which to work—1. Light green; 2. Dark green; 3. Reddish purple; 4. Yellow or golden; 5. White or silvery;—and these may be combined in a variety of ways. Dark-bluish green has a good effect when placed in contrast with light-yellowish green; white with dark green; reddish purple with light green; reddish purple with yellow; yellow with dark green. And these contrasts by no means exhaust our resources. I merely quote them from among a number of experiments which I have actually tried and found agreeable to my taste. I have, indeed, no intention here of laying down any precise or definite rules for the application of these principles; I aim at no more than to show that the materials in colour exist, leaving their combination to be dealt with by the ingenuity and industry of a cultivated taste. It would be chimerical to suppose, unfair to expect, that any person taking this subject in hand without previous study, or without the fullest acquaintance with the materials which exist—some of them newly introduced—

would at once realise any great measure of success. To such an individual the scheme would probably appear Utopian. He might, by a momentary effort, call up in his mind the short list of old and familiar trees with purple, white, and yellow leaves—the purple Beech, the white Poplar, the variegated Turkey Oak, and some few others still among the most valuable—but so few in number that he would dismiss the subject as impracticable. But unless familiar with the black and yellow Oaks, the yellow Elm, Acacia, and Alder, the white-leaved Acer Negundo, and the many beautiful Maples recently introduced from Japan—the host of richly variegated trees only now becoming plentiful,—in a word, unless familiarly acquainted with the latest introductions of this kind, he would, I submit, be drawing his conclusions from incomplete information.

In order to bring my views to a practical test, I have here a diagram, in which I have merely sought to obtain the identical colours existing among trees and shrubs, and must refer you to the specimens exhibited to show that these colours really exist. This diagram, hastily executed, will perhaps also give some idea of the effect of the arrangement of the colours which we possess. The light green here is supposed to represent the Larch, the dark green the Yew, the reddish purple the purple Beech, the yellow the golden Oak and the white variegated Acer Negundo. There is also introduced here the ordinary green of nature, which may fairly be taken as the groundwork of our operations.

Now I am well aware, and would not ignore the fact, that the colours of the leaves of trees are influenced in some degree by cultivation and soil; but this does not affect our argument, as in the majority of cases they still bear the same relation to each other.

I have now to offer a few general remarks, with brief examples in support of the views which I have advanced. Let us remember that we are working with pictorial trees for pictorial effect. We may have spring pictures, summer pictures, autumn pictures, and permanent pictures. Summer and permanent pictures are the most valuable because of their greater durability. Specimens of these are before you, and a list of their names will be given at the end of this paper. The materials for spring and autumn pictures can only be shown in spring and autumn. The varying tints of the unfolding leaves of some trees in spring, and the glowing colours of the leaves of other trees in autumn, must be familiar to all observers; and these trees are beautiful in their seasons, whether regarded individually or in combination. But they are transitory. The varied and telling colours of spring, ordinarily, quickly subside into the universal green; and the bright leaves of autumn fall speedily before the frost and gales of that season. Yet both are desirable. The warm red and yellow tints of the unfolding leaves are peculiarly cheering in the cold days of early spring, and should be introduced freely when planting. The splendour of the American forests in autumn is a theme on which many travellers have loved to dwell, and leaves from these forests may be seen in that admirable institution the South Kensington Museum. The trees we have long had under cultivation, and they are not only available but capable of being wrought up with magnificent effect in this country. Among the most effective of spring trees the Corstorphine Plane (*Acer Pseudo-Platanus flavo-variegatum*), yellow; the *Acer colchicum rubrum* (red); the purple Horse-chestnut (*Æsculus Hippocastanum purpureum*), purple; and the Silver Poplar (*Populus argentea*), white, may be instanced. The shades of green at this season are also innumerable, although for the most part gradually subsiding into one nearly uniform tint. The brightest among the leaves of autumn are perhaps the Scarlet Oak (*Quercus coccinea*); the Liquidambar (*L. styraciflua*), the Stag's-horn Sumach (*Rhus typhina*), the *Ostrya virginica*, and several varieties

of Cherries, Pears, and Maples ; these usually die off bright red. Of yellow shades may be instanced the Lombardy and Ontario Poplars (*P. fastigiata* and *P. canadensis*), the Norway Maple (*Acer platanoides*), the Horse-chestnut (*Æ. Hippocastanum*), the *Salisburia adiantifolia*, the Lime (*Tilia Europæa*), the Tulip-tree (*Liriodendron tulipiferum*), the White Mulberry (*Morus alba*), the *Gleditsia triacanthos*, the *Magnolia tripetala*, the *Juglans amara*, the *Acer Negundo*, the *Kölreuteria paniculata*, the Birch (*Betula alba*), and certain varieties of Cherries, Pears, Thorns, and Maples.

As examples of planting for pictorial effect, nothing can be more beautiful in the flower-garden than pillars or columns of Ivy, provided that they be appropriately placed. Here we have dark green, light green, green blotched with gold, and green edged with silver, all calculated to form permanent pictures. Standard and pyramidal golden Yews and golden Hollies also form beautiful permanent pictures in the garden. All permanent pictures are of course also winter pictures ; but the common Beech (*Fagus sylvatica*) deserves special notice : it holds its reddish-brown leaves throughout the winter, and this colour stands in warm and beautiful contrast with the Pines and other Evergreens at that season. The white bark of the Birch, the white, purple, and yellow bark of certain species of Willows, the red and yellow berries of the Holly, and the yellow and black berries of the Privet, are also invaluable for winter decoration. I have often admired the effect of three large trees placed in juxtaposition in a garden in my neighbourhood, whether by accident or design I have no means of ascertaining. Near the bend of a river is a Weeping Willow, the pale-green drooping branches appearing in the distance almost to sweep over the stream. Behind rises a mass of the dark feathery Yew, the plumes of foliage waving in beautiful contrast of motion, form, and colour. Still further behind there appear in spring rigid masses of Apple-blossom, the snow-white crimson-tinted flowers blending in beautiful contrast with the dark and pale green of the Yew and Willow. Here we have the evergreen and deciduous forms in combination, but they are most effective as a spring or summer picture. Of all the errors to be avoided in the association of colours, I would caution the planter against an arrangement that should present a "spotty" appearance. Broken lines or irregular shapes of colour appear to me more desirable in forming plantations or belts than figures with a more easily definable outline. On the face of belts or woods three or five plants of a kind may be planted in a group, the outline being so broken that there are bays or promontories. In parks and gardens, single trees or groups of trees, each group of a distinct colour or shade of colour, would seem most appropriate. In working out these ideas we must never lose sight of harmony, remembering, however, that there are harmonies of contrast as well as of analogy. There is another point which should on no account be lost sight of. There are some trees the effect of which is beautiful close to the eye, but which lose their distinctive character in the distance. Such are more appropriate to the garden, where brought in close contact with the eye, than in the distant landscape. But there are others which lose little or nothing from a distant view, and these facts must be taken into account and acted on when planting. As a rule, trees with variegated leaves are best placed near to the eye, and those of one uniform tint are most effective in the distance. I have already instituted a comparison between the colours of flowers and the colours of leaves, but there is an important difference in them which I must not omit to mention. The colours of flowers are often so bright and pronounced that certain of them cannot be judiciously brought into close contact ; they require an intervening mass or line of some intermediate or neutral colour to render the effect agreeable and satisfactory. Not so, however, with the colours of trees ; they are so subdued in tone that the association of the strongest

does not produce violent contrasts. Again, for this very reason, the colour of leaves being less bright than those of flowers, it becomes necessary here to compensate by breadth of colour that which, with flowers, is effected by brilliancy of tone. Thus it follows that great breadths of scenery may be dealt with effectively. It is, indeed, a mere question of outlay, and nothing more, whether the variety of colour shall or shall not be extended from the garden to the pleasure-ground and shrubberies, the hills of plantations, the outskirts of parks and forests, and the most distant mountains and plains.

A.—SUMMER PICTURES.

1. *Light Green.*

Europæa.
Am distichum.
Albia triacanthos.
Alba lacinjata.
Negundo.
Europæa.
Prunus syringæfolia.
Pseudo-Acacia.
Alba occidentalis.

2. *Dark Green.*

Alba crispa.
Alba monophylla.
Alba glutinosa.
Laburnum.
Aucuparia.
Alba hippocastanum.
Alba nigra.
Sylvatica.
various kinds.
Alba Cerris.

3. *Reddish Purple.*

Sylvatica purpurea.
Alba campestris fol. purp.

Acer Pseudo-Platanus fol. purp.
" japonicum atropurpureum.
Corylus Avellana purpurea.
Quercus pedunculata purpurea.
" nigra.
Berberis vulgaris fol. purp.

4. *Yellow or Golden.*

Quercus Cerris variegata.
" Robur var. Concordia.
Fraxinus aucubæfolia.
Castanea vesca variegata.
Sambucus nigra aureovariegata.
Symphoricarpos vulg. fol. aureis.
Spiræa opulifolia lutea.
Robinia Pseudo-Acacia aurea.

5. *White or Silvery.*

Populus argentea.
Acer Negundo variegatum.
Tilia argentea.
Pyrus vestita.
" salicifolia.
Salix argentea.
Shepherdia argentea.
Hippophæe rhamnoides.

B.—PERMANENT PICTURES.

1. *Light Green.*

Pyrenaica.
Deodara (the green variety).
Orientalis.
Rubra.
Alba leucarica.
Pinus thurifera.
Virginiana.
Chinensis.

2. *Dark Green.*

Pinus insignis.
Austriaca.
Nordmanniana.
Alba imbricata.
Pinus Lambertiana.
Alba Ilex.
Pinus Lusitanica.
Alba.
Alba elliptica.
Alba and Yews, various.

3. *Purple.*

There are no suitable purple Ever-

greens, consequently this colour is restricted to summer pictures.

4. *Yellow or Golden.*

Abies excelsa Finedonensis.
Cupressus thyoides variegata.
Ilex aquifolium aurea.
Thuja aurea.
" elegantissima.
Taxus baccata aurea.
Euonymus japonica flavescens.
Retinospora pisifera aurea.

5. *White or Silvery.*

Cedrus Deodara (the glaucous variety).
Pinus excelsa.
" monticola.
" nivea.
Abies alba glauca.
Ilex aquifolium argentea.
Juniperus Virginiana glauca.
Rhamnus Alaternus fol. argentea.

PETUNIAS AS BEDDING PLANTS.

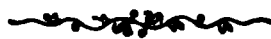
I CAN fully endorse all that has been said by D. E. B. in praise of the *Petunia* as a bedding plant. I think that seedlings may be confidently depended on to produce good free-blooming varieties, if the strain be a good one. I have had glorious beds of *Petunias*, the plants having been raised from seed ; and these beds have received the largest share of admiration this season. The seed should be sown in seed-pans, or wide-mouthed 42-sized pots, which ought to be well drained with crocks to about one-third of their depth, over which should be placed about an inch of the coarse siftings of the soil. This keeps the fine soil from being washed down among the drainage. A good drainage should be given to all pots and pans in which fine seeds of this character are to be raised. The finely-sifted soil can be used for sowing the seed in. I sow about the first week in March, and a vinery or cucumber-pit will suit as a temperature in which to raise the plants. As soon as the rough leaves are formed, the pots should be removed to a greenhouse, and placed near the glass to keep the plants from being drawn. When large enough to handle, the plants are pricked off into pans, or shallow boxes, and placed in a little warmth for about a week or ten days ; this gives them a fine start, and by the time they are wanted for planting out, they are of strong robust growth.

After the temporary sojourn in warmth, they are removed to a greenhouse or cold frame, and here they are hardened off till required for bedding out by the middle of May.

As I was passing from the Cambridge Railway Station to the Botanic Gardens of the University town on the 15th of August last, my attention was attracted by the charming appearance of a villa garden, the beds of which were planted on the mixed system, prominent being *Petunias*, which were bright, gay, and effective.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



GARDEN RECORDS.

NO. X.

MR FRANCIS N. DANCER'S MARKET-GARDEN, LITTLE SUTTON,
TURNHAM GREEN, MIDDLESEX.

A LONDON market-garden is ever an instructive place to visit, and this being one that has always borne a high reputation, we felt certain to be much interested, and were not disappointed. This market-garden is famous for the production of fruit, and Plums, Apples, Pears, Currants, and Gooseberries are

the leading features. It is in three or four divisions : one lies eastward of the Chiswick Gardens, another southwards, and further plots westward ; and it is on one of these that Mr Dancer resides. The soil is that rich black loam found along the valley of the Thames, and which is so suitable for market-gardening purposes.

This paper is intended as a record of certain features presented in these grounds as we walked through them. It was just in the midst of the Plum season, and, allowance being made for the extraordinary fruitfulness of the Plum this season, the crops were of a wonderful character. It was computed that the yield of Plums for this season was four thousand bushels, and Mr Dancer stated that the difficulty was to procure a sufficient number of hands to pick and pack them, and conveyances to take them to Covent Garden Market.

We had an excellent guide and companion in Mr A. F. Barron, of the Royal Horticultural Society's Gardens, and our explorations commenced at the eastern portion of the grounds. Here we saw large plantations of the Victoria or Alderlin Plum, a variety that is well known and extremely useful for culinary purposes. The trees were both of bush shape and of the standard form also, and all were bearing very heavy crops. This is a bad dry-season Plum, because, being a great bearer and the crop very thick, the fruit does not swell out, and it is therefore small in size. In a wet season it is much larger. This Plum finds a ready sale in Covent Garden Market, and large quantities are sent on to Glasgow, Manchester, and other places in the north. The Victoria Plum is a capital tree with which to fill up blanks in orchards ; it does not mind a crowded position ; and when a tree decays in one of his plantations, if the spot be at all confined, Mr Dancer plants a Victoria Plum. Another staple Plum was Gisborne's, a roundish oval-shaped fruit of a yellowish-green colour, that is also a prolific bearer, and comes in rather earlier than the Victoria ; it is of somewhat coarse quality, but makes excellent preserves, &c. Underneath these Plum-trees, and near them, were plantations of red and black Currants, which are grown to a very great extent. Between the Currant-trees were rows of purple sprouting Broccoli, which grows well on poor soil and in little room. This is a variety of Broccoli that gets overlooked because of its coarse appearance, but when cooked it is a delicious and finely-flavoured vegetable, and one that is gradually finding its way into the gardens of large establishments.

A good quantity of that fine dessert Plum known as Jefferson's is also largely grown, though not so extensively as the Victoria. Another was Richardson's, a black Plum something after the Mussel character, and an enormous cropper. Hundreds of bushels of it are grown, as it is a particular favourite of Mr Dancer's. It bears a high character as a cooking Plum.

There was also a very large number of Gooseberry bushes, among which had been planted pyramid trees of Cox's Orange Pippin Apple. Mr Dancer grows a great lot of this fine variety between the bushes, the trees being planted 12 feet apart each way. This is a great improvement on the old plan of standard trees, under which nothing would grow. These bush-trees bore heavy crops of fine fruit. Instead of putting various kinds of Apples in a plantation, as of old, Mr Dancer and others form a plantation of the same variety ; by this means a piece of ground is cleared at the same time, and recropping is not retarded. Near these, and skirting one side of a walk, was a line of fine young standard trees of the Wellington Apple, heavily cropped—a sort that sells well, and brings a good price.

A plantation of Red Currants here shows considerable variation. It is seen in the habit of growth, shape of berry, and fruitfulness. Mr Dancer grows very

largely of one variety he has selected, which bears very abundantly on young and small trees, to such an extent as to produce crops equal in extent to that seen on trees as large again of the old variety. He has no particular name for it, but is content to have an exceedingly abundant bearer.

At this point Pears came into view, for a change of crop is seen as each plantation is passed by. Louise Bonne of Jersey could be seen bearing great crops, grafted on the Quince stock, the fruit of fine quality : there was more than an acre of this variety, and it is considered to be one of the best and most profitable Pears grown. Between lines of pyramid Apples could be seen Potatoes, and between the rows of Potatoes Savoy, for a winter crop.

Of Poupert's Plum a great quantity is grown ; it is a medium-sized reddish-purple variety of excellent quality, and an abundant bearer, can be used for dessert or cooking purposes, and valuable because late. Rivers's Early Prolific is the earliest Plum grown : it is a round purple variety, like an Orleans, and the first of the group that finds its way into the market. Another was Prince of Wales, a round, reddish-purple, medium-sized Plum, a great bearer and a good kitchen sort, of the Orleans type also : a great quantity of this is grown, as it is a certain cropper year by year.

In odd corners away under the shade of trees, where nothing else would grow, patches of Rhubarb could be seen, and in such places it does remarkably well. Now followed a large piece of bush-trees of Small's Admirable Apple, about 4 feet in height, which bore a heavy crop of this excellent kitchen variety. These are worked on the Paradise stock. Succeeding these was another piece of Cox's Orange Pippin, the trees larger than any we had yet seen, the crops, as well as individual fruits, being very fine. To show how the London market-gardeners make the best use of their ground, it may be stated that the piece of land on which these Apples were growing produced last spring a good lot of early Cabbages ; this was succeeded by early Potatoes, and before the Potatoes are lifted, lines of Savoy Cabbage for winter use are planted between the rows.

Returning again to Plums, it may be stated that the season lasts about two months, the early and late varieties turning in about that time. A capital Plum is Sandell's Late, considered to be of very fine quality ; it is the latest of all, and fit for general use. The crops of this variety were something astonishing. Mitchelson's, a medium-sized, oval-shaped, deep purple Plum, is also largely grown, and a great lot of this goes to Scotland. Goliath is also grown for market purposes, but the drought had told on it : it is a general good bearer. A fine late cooking Plum is Autumn Compote, one of Mr Rivers's varieties. Belle de Septembre is another fine late Plum also.

Here we come upon a piece of Prince of Wales Plum, where the gatherers are busy at work. These and other trees are gone over three times by the pickers ; the largest fruit, being also the earliest, is gathered as soon as ready ; this allows space for the smaller fruit to swell, and another picking takes place when the smaller fruit is ready. Of the yellow Magnum Bonum a great quantity is grown ; also of Pond's Seedling, an enormously large, bright red, oval-shaped Plum, some of the trees bearing very large clusters of fruit. Of Mitchelson's, Sandell's, Victoria, Prince of Wales, and Diamond Plums, there were plantations of large trees covered with fruit, the former preponderating. One great advantage about Mitchelson's Plum is, that it looks thoroughly ripe before it really is so, and travels well : it is a rich dark purple Plum, with a fine bloom on it. All the Plums that travel a long distance are packed before they are fully ripe, and being placed in the baskets when somewhat hard in the flesh, get nice and mellow by the time they reach their destination. They are packed in round

baskets, which are usually denominated "sieves," green nettles being employed in the process. Mr Dancer informed me that he had sent 400 bushels of Gisborne's Plum to Messrs Grosse & Blackwell of Soho Square, for preserving purposes.

Further, in the way of Apples, there were trees of Warner's King, Cellini Pippin, and Golden Noble, all very fine; also a good quantity of Hawthornden, which had been gathered by the 20th of August; of Pears, Beurré Box, a fine Covent Garden variety; Beurré d'Amanlis, of which there were very fine crops on large bush trees; Jersey Gratioli, a great lot, grown on fine young pyramidal trees; Aston Town also, a small Pear that sells well; the Hessel, of which very large crops could be seen—this is a Pear of which vast quantities are sent into Covent Garden market; and lastly, Beurré Capiaumont, a good market Pear also, that bears and sells well. Some standard trees of this had heavy crops.

Morello Cherries growing on bush trees in open parts of the ground appeared to be quite a new feature, and heavy crops have been taken from them; notwithstanding, the trees looked remarkably well. Underneath the large trees is grown the American Peach-blossom Potato, a large red round variety that will grow where no other will, and never takes the disease: it makes rank growth, but is said to be a good keeper, and of fine quality at the end of the winter. Among Currant trees, where it is more open, Brussels Sprouts are planted.

Moss Roses for cut flowers were quite a feature. Of these there was about three-quarters of an acre, and as many as forty-five dozen bunches have been sent to Covent Garden market on one night in the month of June, the average price obtained being about 6s. per dozen bunches. The Roses are well manured over the top to about the depth of 3 inches, the shoots are pegged down, and the young growth pinched back to three or four eyes. The Gooseberries are all gathered in a green state, and this for two good reasons: first, they sell as well as when ripe, and there is no waste; secondly, they are thus gathered at a season when labour is so not much in demand. The French or Dutch Horn Carrot, usually used for frame purposes, is here grown in the open ground very largely. About 2½ inches in length and 1½ in diameter, there is no waste, and it is a delicious eating variety. How truly Mr W. Robinson wrote of them in his book on French Gardens as "pretty dwarf tender little carrots." "They are always fresh, always to be had, and never contain a particle of the tissue which makes the coarser Carrots so much less valuable." Mr Dancer, it is to be presumed taking another hint from Mr Robinson's book, was growing Asparagus after one of the methods employed by the French gardeners. On page 501 of 'The Parks, Promenades, and Gardens of Paris,' Mr Robinson states, "I first saw it (Asparagus) growing to a large extent among the Vines. The Vine under field culture, I need scarcely say, is simply cut down to near the old stool every year, and allowed to make a few growths, which are tied each to a stake: they do not overtop the Asparagus in any way, but, on the other hand, the strong plants of that show well above the Vines. It was not in distinct close lines among the Vines, but widely and irregularly separated, say 6 or 7 feet apart in the rows, and as much as 9 the other way. They simply put one plant in each open spot, and give it every chance of forming a capital specimen, and this it generally does. When the stems get large and a little top-heavy in early summer, a string is put round all, so as to hold them slightly together (the careful cultivator uses a stake), and the mutual support thus given prevents the plant from being cut off in its prime. We all know how apt it is to be twisted off at the collar by strong winds, especially in wet weather, when the drops on every tiny leaf make the foliage heavy. The growing of Asparagus among the Vines is a very usual mode, and a vast space is

thus covered with it about here." Acting on this idea, Mr Dancer had placed out a small plantation of Asparagus : how it will succeed he will be able to show next spring.

All rubbish, such as the prunings of trees, &c., is collected together, and burned, and the ashes so obtained used to sprinkle over plants affected by fly, which are dispersed if not killed by the application.

Such are a few of the chief features of one of the leading fruit-gardens about London. There are many of them, and they furnish many excellent hints and suggestions to observant minds. A walk through any one of them at any season of the year would not be labour altogether lost.



DAHLIA EXPERIENCES.

"A FOUR YEARS' SUBSCRIBER" desires us to give a list of Dahlias of 1868 and 1869 which can be recommended for form, constancy, and size. His soil, he states, is a very heavy one, and he is compelled to use an abundance of manure, which he thinks is the reason why so many sorts come "seedy" with him. He has forwarded two lists of Dahlias, one containing varieties he can grow, the other those he cannot grow. The former includes Mr Dix, Vice-President, Miss Henshaw, Criterion, Mrs Dodds, white tipped with purple ; Baron Taunton, Annie Neville, Caroline Tetterell, Firefly, Hugh Miller, Sir Greville Smythe, Buttercup, Lady Gladys Herbert, Mrs Boston, Annie Keynes, Madlle. Nillsson, Flossy Gill, Andrew Dodds, Paradise Williams, Heroine, Julia Wyatt, Lady Jane Ellis, Emperor, Chancellor, Leah, Ellen Potter, Imperial, Golden Drop ; and the following fancy varieties :—Grand Sultan, Ebor, Samuel Bartlett, Prospero, Attraction, Billy Button, Master Johnny, President Lincoln, Butterfly, and Fanny Sturt. The following is the list of Dahlias our correspondent cannot grow to his satisfaction :—Clara Simons, Scarlet Gem, James Backhouse, Artemus Ward (fancy), Princess Alice, Favourite (fancy) ; Chairman and Mrs Dodds, yellow ; all of which are described as coming seedy ; Hebe, James Hunter, Lord Derby, British Triumph, John Kirby, Hon. Mrs G. Wellesley, Guardsman, Samuel Naylor, Regularity (fancy), Mrs Brunton, Lady Popham, Miss Roberts, Mrs Edgar Green, and Queen Mab (fancy), as small ; Lady Derby, hard centre ; Queen of Sports (fancy), small and thin ; Miss Ruth (fancy), coarse ; Chameleon (self), hard centre ; Albion, pointed and small ; Yellow Boy, bad centre ; Earl Russel, bad shape and low centre ; and Flambeau, small and hard centre. Our correspondent states that both lots of flowers had similar treatment ; the plants were well cut out, an abundance of manure dug in, a top-dressing of manure given, and a liberal allowance of guano-water ; these have produced the foregoing results. "I have no doubt," he adds, "that the seedy condition of many of the flowers has been caused by cutting out, but several years' experience has proved that I must do this in order to get size, which is a most desirable thing on the exhibition table. I trust you will be able to name a few sorts, fancy and selfs, which will bear my treatment and at the same time embody the requirements mentioned in my letter—viz., form, size, and constancy."

The foregoing remarks are not without their use to other cultivators of the Dahlia, and we have thought it well to publish them. We sent our correspondent's letter and lists on to Mr Chas. Jas. Perry, of Birmingham, for many years past one of the most successful amateur cultivators of the Dahlia, and the following is his reply :—

“Your correspondent should discard his No. 2 list, with the exception of Lord Derby, Chairman, Queen Mab, Mrs Brunton, James Hunter, and Regularity, all of which are too good to be dispensed with. He can with advantage add to his list of show kinds the following—viz., Head-Master, Toison d’Or, Gypsy Queen, Yellow Perfection, Thomas Hobbs, King of Primroses, Valentine, Oxonian, Flag of Truce, Memorial, Matilda Keynes, and Adonis; and to his list of fancy varieties, Polly Perkins, Pauline, Viceroy, Purple Fluke, Mazeppa, Leopard, Magdala, Lightning, and Octoroon. As his ground is heavy, I should recommend him to have it well ridged up as soon as the roots are taken up, and allow it to remain so until it is prepared for planting. If *well* dressed then with farmyard manure, no guano-water will be necessary.

CHAS. JAS. PERRY.

THE CEDARS, CASTLE BROMWICH, BIRMINGHAM.

[Will other of our readers who are Dahlia cultivators give us the results of their experience also? We shall be much obliged if they will do so.]



THE UTILITY OF SCIENCE.

THE address of the President of the British Association, delivered at Liverpool, illustrates in a very remarkable manner the practical utilities of Science. One of the largest and profoundest questions with which Science deals is that of the relationship of life and matter, yet the discussion of that question brings us into immediate contact with those terrible epidemics which scourge all organised beings from the insect up to man. Dr Huxley reviews the progress of scientific discovery in its inquiry into the genesis of life, and pronounces a strong opinion in favour of the theory that only life begets life, and against the theory that life can ever spring from death. With true scientific modesty, he declines to assert that at no period in this planet’s history has living protoplasm ever been evolved from matter which was not alive, but he insists that no such evolution has ever been shown to have taken place within our experience or observation. So far as that experience goes, an impassable line exists between living matter and matter which is not alive, and the living never comes out of the dead. The experiments which demonstrate this scientific truth lead us into the realm of inquiry with which Dr Tyndall familiarised us early in the year in his striking lecture on “Dust and Disease.” Dr Tyndall’s experiments completed the demonstration of the doctrine of Biogenesis—that is, the doctrine that life springs only from life, and never from dead matter—by showing first that ordinary air is full of particles, which are very often the floating germs of animal and vegetable forms; and secondly, that filtration through cotton wool allows only physically pure air to pass. These minute forms, floating in the dust which the sunbeam reveals, are the origin of all the life which putrefaction and other forms of fermentation produce. It is this minute life, sometimes in the form of fungi, sometimes in that of minute animalculæ, which is the cause of infectious and contagious disease. The terrible disease called Pébrine, which has been so fatal to silkworms, has been demonstrated by M. Pasteur to be caused by the development and multiplication of minute organisms in the body of the silkworm. These organisms pass from one silkworm to another by infection, by contagion, and by transmission in the egg, and develop into a disease which greatly corresponds to the cholera in man. M. Pasteur has consequently been able to suggest a method of extirpating the disease, which has been completely successful wherever it has been carried

out. A similar discovery had previously been made as to the cause of the Grape disease, and Science has thus saved to France the silk crop and the Grape crop, and shown the way to their future safety. But even greater results than these may be expected from these investigations. The cholera and the scarlet fever are probably both due to minute organisms which float in air or water, and being received into the body, develop and propagate there. The germ theory of life is leading us to so complete a knowledge of epidemic diseases, that Professor Huxley is able to say that so far as scarlet fever is concerned, "the facts which I have placed before you must leave the least sanguine without a doubt that the causes of this scourge will one day be as well understood as those of Pébrine are now, and that the long-suffered massacre of our innocents will come to an end." It is thus that science and civilisation go hand in hand together. We study Nature to subdue her, stoop to humble observation of her ways that we may conquer her; and Science, which is only knowledge of her laws, makes us free of her kingdom.—*Daily News*.



HORTICULTURAL EXHIBITIONS.

DUNDEE HORTICULTURAL SOCIETY, September 1.—This Society held its annual meeting on this date in the Baxter Park, with results most gratifying to all connected or interested in its success. The show was contained in three tents, situated near the entrance gate from the town, the large marquee being allotted to pot-plants, and the two lesser ones afforded accommodation for cut flowers, fruits, and vegetables. Immediately in front of the large tent, and between the two smaller ones, a space was enclosed and tastefully furnished with dwarf Firs and evergreen shrubs. On no former occasion has there been such a display of really fine pot-plants, and one can only attribute this success to the prizes offered for groups, for which four separate prizes were given.

Conspicuous among the groups of from twenty to twenty-five plants shown by gardeners was that furnished by Mr Heath, Clement Park Gardens, who was first with a well-assorted lot. In the nurserymen's group of thirty stove and greenhouse plants, Mr James Cocker, Aberdeen, was first; Messrs Stewart & Sons, Dundee, second; and Messrs Laird & Sinclair, Dundee, third. Other groups of less numbers were good, and the prizes well contested. Cut flowers made a good display, notwithstanding the dry summer. Dahlias were numerous, and some really excellent. Mr M'Pherson, Aberdeen, took first prize in the nurserymen's class for a stand of eighteen blooms, and Mr Cocker was second. Hollyhocks were comparatively poor, both in spikes and cut flowers. Gladioli, as is usual here, were excellent, especially those staged by Mr M'Pherson. Roses formed a good array, the blooms nice indeed for this season of the year. Coleuses were numerous shown, and, we are inclined to think, shown to disadvantage. They stood above the reach of the eye, and too near the canvas for effect. On the whole, they formed a gloomy feature in the show. The Fuchsias were creditable to the exhibition, as also to the growers. Pelargoniums were shown in abundance and in excellent blossom; Mr George Philip, Huntly Castle Gardens, carrying the palm with four splendid doubles; tricolor and bronze-leaved kinds were also superb. We have seen the Ferns in greater strength here, but any deficiency in numbers was amply compensated for by their fine quality. A plant of *Lilium auratum* was of remarkable excellence. This plant came from Mr James Fergus.

son, a mechanic, and any gardener might have been proud of it. One large stem sprung from the centre, adorned with thirty full-sized expanded blooms. There were also two lesser stems, the three coming out of one bulb. Strange that a company of Japanese should have visited the show, and the first object to greet them was this plant, which they at once recognised, when an exchange of warm glances, accompanied by happy mutterings, passed amongst them.

In regard to the fruit, an exceedingly fine collection came from Mr William Brow, Kilmaron Castle Gardens, which was placed first. Regarding the Grapes, suffice it to say that Mr Johnston, from Glamis Castle, was here, and was conspicuous wherever his fruit lay. His four bunches in that class were very superior, but his bunch for bloom beat all that has been witnessed on these tables. We may safely say that scarcely a bad bunch of Grapes was present, and there was a great number staged. Peaches were shown extensively, and many fine fruits were among them. Mr Philip, Castle Huntly Gardens, took first with full-sized and beautifully-coloured fruits. A large golden-coloured sort called "Titon de Venus," sent by Mr Irvine, gardener, Hermitage, Broughty Ferry, was so good that many thought it ought to have had a prize awarded it. These Peaches were the largest on the table, very regular in form and size, with first-rate flavour, but wanted the rich appearance of the others. Plums were also good and plentifully produced. Pine-Apples not very large, but in fine form and colour. In short, the whole range of fruits did credit to the exhibition.

Vegetables were not so formidable in quantity, but their quality was unimpeachable. A. K.

[A list of prizes was sent with this, but our space is so occupied that we are compelled to abandon the publication of mere prize-lists.—EDS.]

THE FLORAL FETE IN THE BAXTER PARK, DUNDEE.—Saturday being the cheap and last day, the attendance was enormous. Besides the members and their friends who passed free, there were 850 passed the pay-gates at 6d. each betwixt ten and three. From three to nine there entered no less than 7500, who paid 3d. each. Altogether, there were about 10,000 visitors on Saturday. The sum drawn during the three days amounted to upwards of £200. Notwithstanding the crowd, through the admirable arrangements of the directors and the disposition of the visitors, the greatest order prevailed. The directors, not being sham, nominal, or merely ornamental, but thorough workers, were all present during the entire three days, and conducted the arrangements in person. Notwithstanding their vigilance, and the police present, we were sorry to note that some flower-fanciers had succeeded in filching slips from new plants. One of these was detected, and we hope he will be punished as he deserves. [So do we.—EDS.] Among the miscellaneous subjects exhibited was a collection from Mr B. Kirk of 2000 queen wasps, more famous in death than in life, for they were much inquired after at the show. He declared on the label, "had all these queens escaped, they would have produced this season a progeny greater in number than the population of Great Britain."

METROPOLITAN SOCIETY FOR THE ENCOURAGEMENT OF FLORISTS' FLOWERS. FIRST EXHIBITION AT THE CRYSTAL PALACE, SYDENHAM, September 6.—This was in every respect an excellent exhibition, perhaps one of the most extensive shows of Dahlias that has taken place during the past twenty years. Some idea of its extent may be gained when it is stated that in the seven classes for Dahlias there were sixty-nine entries, and of these sixty-three stands of flowers were produced. The various flowers were arranged on a line of tables running from the

centre transept towards the east end of the Palace. Cut flowers formed the whole of the exhibition, and in no one particular could it be denominated weak.

The best 48 Dahlias were staged by Mr John Keynes of Salisbury, and fully maintained his high reputation as a cultivator. Next to him came Mr H. May, Bedale; Mr J. Harrison, Darlington; and lastly Mr George Edward, York. Mr Keynes's stand consisted of Vice-President, Queen of Beauties, John Kirby, Flag of Truce, Annie Neville, John Neville, Purple Flake, Gazelle, James Cocker, Amy Creed, Heroine, Princess of Prussia, Octoroon, William Lucas, Mrs Henshaw, Yellow Boy, Flora Wyatt, Mrs Thornhill, Mary Keynes, Mrs Eckford, Mr Dix, Matilda, Toison d'Or, Lady of the Lake, Sir G. Smythe, Lady Jane Ellis, James Backhouse, Golden Drop, Hon. Miss Herbert, Victory, Lilac Queen, John Harrison, Julia Wyatt, James Hunter, Lady Gladys Herbert, Mrs Boston, Nelly Buckle, Emperor, King of Primroses, George White, Jenny Austin, Memorial, Norfolk Hero, Leah, Lightning, Earl Pembroke, and seedlings. In Mr May's stand were good examples of Leopard, George White, Baron Taunton, Leah, Miss Henshaw, Master of Arts, Eclipse, Criterion, Memorial, John Kirby, and Yellow Boy.

In the class for 36 flowers, Messrs Draycott & Sons, Humberstone, Leicester, were first with superbly-finished blooms of Norfolk Hero, Lady Jane Ellis, Criterion, Gazelle, Lord Derby, Heroine, John Dunnington, Annie Neville, Volunteer, Julia Wyatt, Blushing Fifteen, James Hunter, Mr Dix, Princess of Wales, Memorial, Leah, Lilac Queen, Eclipse, Vice-President, Flag of Truce, Miss Henshaw, Hon. G. Wellesley, John Kirby, Yellow Perfection, British Triumph, James Bennett, Mrs Boston, Mrs Thornhill, Lady Gladys Herbert, Lord Palmerston, Juno, Sir G. Smyth, King of Primroses, and George Brown. The second, third, and fourth prizes in the same class were awarded to Mr May, Mr Keynes, and Mr Harrison, in the order in which the names are placed.

The prize-takers in the class for 24 were Mr J. Walker, Thame, Oxon; Messrs Kelway and Son, Langport; Mr H. Clark, Rodley, near Leeds; and Mr T. W. Pilcher, Horsham, Surrey, in the order in which the names are placed. The varieties in the first prize-stand were James Austin, Councillor, Purity, Mr Dix, Yellow Boy, Annie Neville, Ne plus ultra, John Kirby, Gazelle, Lady J. Ellis, Vedette, Lady G. Herbert, Hugh Miller, Toison d'Or, Norfolk Hero, Nelly Buckle, George White, Mrs Boston, Flag of Truce, Heroine, Champion, and Yellow Perfection.

The fancy varieties were also contributed in grand condition, Mr Keynes taking first for 24 with Flora Wyatt, Lightning, Flossie Williams, Chang, Sam Bartlett, Alice Purchase, Sparkler, John Sealey, Mrs Bunn, Hero of York, Richard Dean, Marvellous, John Salter, Wonderful, Fanny Sturt, Chameleon, Grand Sultan, Octoroon, Oliver Twist, Attraction, Viceroy, Purple Flake, Leopardess, and Artemus Ward. The second prize was taken by Mr H. May with Coquette, John Bunn, Gem, Hero of York, Prospero, John Salter, Attraction, Remarkable, Leopard, Lady Dunmore, Glory, Grand Sultan, Queen of Sports, Startler, Leopardess, Polly Perkins, Formidable, Princess of Wales, and Fanny Sturt.

The classes in the amateurs' divisions were well filled, and the blooms on the whole were of excellent quality, although not quite equal to those staged by the trade exhibitors. The first prize for 24 was taken by Mr C. J. Perry, Castle Bromwich; the second by Mr Pelford, gardener to G. Thornhill, Esq., Diddington; and the third by Mr J. Purfitt, Wandsworth Common. Mr G. Martin, Henfield, Sussex, Mr G. H. Tewks, and Mr A. Glasscock, Bishops Stortford, were the prize-takers in the class for 12; and Mr C. J. Perry, Mr Pitfield, Mr Purfitt, and Mr Tewks, in the class for 6 Fancies: the prizes in each instance were awarded in the

order in which the names are placed. The varieties were chiefly the same as those shown in the previous classes.

Hollyhocks were good, considering the dry season we have had. The best collection of nine spikes was shown by Mr H. Minchin, Hook Norton, Oxon; and the second by Mr W. Chater, Saffron Walden. The best varieties staged were James Anderson, Her Majesty, Anna Maria, Acme, Hermione, Fred. Chater, Mrs Bruce, Speciosa, Whitley King, Exultium, Cygnet, Oscar, Perfection, Sylph, and Carus Chater. The position of the above were reversed in the class for 24 cut blooms, Mr Chater being first and Mr Minchin second, with Mr Harrison third, and Messrs Draycott & Sons fourth. The stand from Mr Chater consisted of Alfred Chater, Perfection, Countess of Craven, Fred. Chater, Exultium Improved, Speciosa, Bijou, Standard-Bearer, Triumph, Eclipse, Joy, Carus Chater, Bullion, Marion, Exhibitor, Lord Napier, Nonpareil, King, Rose d'Amour, Conquest, and Walden Primrose. Only three stands in the class for amateurs were put up, and the prizes were awarded to Mr W. Minchin, Hook Norton, Oxon, Mr R. Fry, Taunton, and Mr Rickwood, Ilkley, near Leeds, in the order in which the names are placed.

The show of Roses was somewhat limited in character, and, as a matter of course, of but passable quality. Decidedly the best flowers were in the stand of 24 varieties, contributed by Messrs Paul & Son, Cheshunt.

Asters, both French and German, were very fine; and the large size and rich colouring of many of the flat-petalled or French varieties fairly puzzled some of the visitors, whose idea of "Chaney Asters" dates back twenty years ago.

The stands of Gladioli made a fine display, and attracted considerable attention. The best 36 came from Messrs Kelway & Son, Langport; the next best from Mr Geo. Wheeler, Warminster. The best 24 were shown by Messrs Stuart & Mein, Kelso; the second best by Messrs Draycott & Sons. Mr R. Fry, gardener, Taunton, was first in the amateurs' class for 12 varieties, and the Rev. H. H. Dombrain second. The varieties given in last month's 'Gardener,' as shown at South Kensington, will serve to indicate the best flowers staged on this occasion.

Verbenas were finely shown by Mr C. J. Perry and others. The example of Shakespeare in Mr Perry's stand was as fine as a Verbena could well be. The leading varieties in Mr Perry's stand, who was first with 24 kinds, were Model, Mrs Hole, Magnificent, Ada King, Rose Improved, Velocipede, Apollo, Rev. P. M. Smythe, Mauve King, Clara Perry, Mrs George Prince, Miss Lawden, Shakespeare, Giant, Diana, Rev. C. Peach, Modesty, Mrs Stenger, Edwin Day, and the Rev. S. R. Hole.

Large collections of plants, nicely arranged, were contributed by Messrs Downie, Laird, & Laing, and Carter & Co., and materially aided the show. Unfortunately the weather was very unpropitious, nevertheless there was a very good company, and the tables were thronged with visitors.

In the evening the subscribers and friends of the Society sat down to dinner in one of the dining-rooms of the Palace, there being a good muster of florists and others present. The Rev. H. H. Dombrain, Hon. Sec. to the Society, took the chair, and the Rev. Cleaver Peach the vice-chair. Hearty promises of support were given to the Society, and several new subscribers were announced; while others expressed their intention of doubling their subscriptions another season.

ROYAL HORTICULTURAL SOCIETY, DAHLIA AND VERBENA SHOW, Sept. 7.—The large exhibition held at the Crystal Palace on this day helped to thin this one somewhat, though the prizes being rather small, there was but little inducement to show.

In the class for 12 Dahlias, open to amateurs only, the prize-takers were Mr R. Hopkins, Brentford; Mr J. Burfitt, gardener to C. Lambert, Esq., Wandsworth Common; and Mr T. Adams, Wyke Green, Isleworth, who were first, second, and third respectively. The varieties in the stand put up by Mr Hopkins, who is a thorough veteran exhibitor, were Constance, Annie Neville, Bullion, Princess of Wales, Topsy, Chancellor, Sir Greville Smythe, Princess, Chairman, Lady Gladys Herbert, Leah, and British Triumph. Mr C. J. Perry, Castle Bromwich, also sent a good stand, which would have been second at least, but it was not entered early enough to allow of its being staged in competition for the prizes.

The prizes in the open class for 24 were well contested, the first being carried off by Mr J. Walker, Thame, Oxon, who had grand blooms of Chairman, Julia Wyatt, Flag of Truce, John Dunnington, Princess, Autocrat, Nelly Buckle, Toison d'Or, Annie Neville, Gazelle, Mrs Walker, Norfolk Hero, Lady Jane Ellis, Mrs Boston, Lady Gladys Herbert, George White, Queen of Beauties, Mr Dix, Jenny Austin, Rosy Circle, Commander, Ne plus ultra, and Lotty Atkins. Mr Burfitt was also second in this class.

The only exhibitor of Verbenas was Mr C. J. Perry of Birmingham, who staged a splendid stand of 24 varieties. Though the sole exhibitor, these were entered too late for competition. One would have thought that under the circumstances the first prize might have been awarded to Mr Perry without the intervention of this piece of red tape.

Mr W. Bull was the only exhibitor of 6 Lilioms, distinct kinds. They consisted of *L. auratum*, *Auratum maculatum*, *Lancifolium album*, *L. rubrum*, *Tigridium splendens*, and *T. Fortunei*, and were a very interesting group.

ROYAL CALEDONIAN HORTICULTURAL SOCIETY.—This Society held its autumn exhibition in the Music Hall, George Street, Edinburgh, on the 7th of last month. As a whole, it was scarcely up to the average of the autumn exhibitions of the Society. At the same time there were some fine plants, some excellent fruit, and good vegetables produced. Among fruit, Mr Johnston, of Glamis Castle, had splendid bunches of White Muscats, weighing from 5 to 6 lb. each; Mr Greig, gardener to Mr Christie, of Craigend, near Edinburgh, had splendid Alicants and very good Muscats. T. Boyd, gardener to William Sanderson, Esq., Oaklea, Galashiels, got the prize for Golden Champion, with very good bunches of that Grape. Mr Johnston got first for flavour in white Grapes with the Duchess of Buccleuch; and Mr Temple, gardener, Balbirnie, first for black with Black Muscats. Mr Johnston got first for 20 sorts of fruit; Mr M'Kay of The Glen, second. The largest bunch of Grapes we ever saw came from James Dickson, gardener to J. Jardine, Esq., Arkleton, weighing 19 lb. 5 oz.—a well-formed compact bunch named Syrian; but we considered it to be the White Nice, with which the Syrian is often confounded.

Messrs Lawson & Sons filled the orchestra, as they generally do, with a great variety of handsome Palms, Conifers, and fine-foliaged plants. All the other Edinburgh nurserymen contributed to fill the hall with nice ornamental plants.

The members of the Society, to the number of forty, dined together at the Albert, where the usual loyal and patriotic toasts were proposed and responded to.

THE EDINBURGH SOUTHERN HORTICULTURAL SOCIETY held its autumn exhibition in the grounds of George Watson's Hospital on the 14th of last month. There were a great many well-grown plants for a local exhibition, especially fine examples of Zonal and Scarlet Geraniums, excellent vegetables, and some very good fruit.

This Society is doing a great deal of good in the way of developing a taste for horticulture amongst the proprietors of the numerous villa residences on the south side of Edinburgh, and deserves every encouragement.



NOTES AND QUERIES.

WOOLLEN NETTING.—In reply to your correspondent C. Z., I beg to state that the woollen netting referred to by me on page 349 is what is known as "Patent Wool Netting." Messrs Stuart & Mein, Kelso, are the only agents for it, so far as I am informed on the matter. It is manufactured in widths of $1\frac{1}{4}$ yard. The mesh is square (not a diamond, as in ordinary netting), each mesh being $\frac{3}{4}$ of an inch by $\frac{1}{2}$ an inch. The price is 1s. per yard, in webs of about 50 yards long or thereabout.

JAMES M'MILLAN.

TO PRESERVE FRENCH BEANS.—French Beans and Scarlet Runners, nicely trimmed for cooking, can be preserved for winter use by salting them, thus:—Make a brine of salt strong enough to float an egg. Fill a jar with the Beans, then pour over them brine enough to cover them; tie the jar over with bladder. When required for the table, take the beans out of the brine, and put them in clean water for an hour or more: change the water often. They will be then ready to cook in the usual way. It is not every housekeeper that can put French Beans on the table in January.

NAMES OF PLANTS (Jane L.)—1. The Cobweb House Leek, *Sempervivum Arachnoideum*. 2. *Saxifraga pyramidalis*. 3. *Omphaloides verna*. 4. *Arabis lucida variegata*. The foregoing are quite hardy, but it will be as well to give them the shelter of a cold frame during winter, as you have them in pots.

WAR IN RELATION TO HORTICULTURE.—The magnitude of the recent French reverses is vividly realised when a great centre of scientific intelligence, like the capital of France, is hemmed in by a powerful army. The *Jardin des Plantes* is now little else but a collection of cattle-pens; the Champs Elysées a dusty arid throughfare, except when the heavy autumnal rains deluge its untended roads; and the beautiful woods around the city are devoted by the torch or the axe to entire destruction. If the terrible ravages of war could have been prevented by the advancement of Science, and the liberal encouragement of Art, Paris would not now be suffering. We must go deep into the hearts of men before we can find the reasons for such fearful outbreaks of human passion as we are now witnessing.—*Land and Water*.

TOMATO SAUCE FOR COLD MEAT.—Boil Tomatoes when ripe with only enough water to prevent burning; rub them through a cloth; to every quart of pulp add $\frac{1}{2}$ an ounce of Garlic and 1 ounce of Shallots; salt to taste, boil half an hour, strain out the Garlic; add to every quart half a pint of common vinegar and a wine glassful of Chili vinegar; let it stand a day or two before corking.

AMARYLLIS VALLOTA PURPUREA.—Some excellent examples of this fine plant were shown at the meeting of the Royal Horticultural Society on the 7th of September. They were in large pots, and had been in them for five years, and were finely bloomed, several trusses of bloom being on each plant. They were exhibited by Mr Pilcher, gardener to S. Rucker, Esq., Wandsworth, S.W., and the

treatment to which they had been subjected was simple in the extreme. They are grown in a warm greenhouse all the winter, where the temperature does not fall below 40 degrees. In summer they have just enough water to keep them alive, and then they form their flowers. Just now they are making their growth. The soil at the growing season should be kept damp. The variety known as *Eximea* is an improved form, having broader petals and a rather brighter hue of colour.

NERINE FOTHERGILLII.—At the same time Mr Pilcher produced some fine examples of this showy autumn-flowering plant. Some were in 24-pots, others in 12-sized pots. The Nerine requires a winter treatment similar to the *Vallota*, but they are placed out of doors at the end of May, under a south wall, and there allowed to get thoroughly dry and lose every leaf. One specimen in a pot about 12 inches across had not been shifted for 6 years; it was a mass of bulbs, many of which were blooming freely. The variety shown by Mr Pilcher was known as *N. Fothergillii major*.

J. D. P.—For such a wet climate as yours, Lady Downes is the best late black Grape. From what you say of your climate, we doubt if Muscats would ripen with you, and unless this Grape is well ripened it does not keep well. The best white companion for the black Lady Downes is the white Lady Downes. It is the black one in every sense except the colour. The Madredsfield Court is a showy black Grape of good flavour, and if it keeps well, which has yet to be proved, it will be an acquisition. The Mrs Pince's Muscat, according to our experience, is worthless.


Your soil seems much too light for Grapes, therefore use a little cow and not horse manure, and a good few bones of various sizes. There is no portable manure we could recommend you to use for Vines, nor do you require it if you can get the drainage of a dunghill or farmyard.

J. G. H. S. would like to know in your next number how to press flowers and ferns properly, in order to make them keep their colour. (Place them between old newspapers under a heavy weight, and dry them quickly; that is, as often as the newspapers get damp replace them with dry ones.—EDS.)

TOBACCO (St. E.)—The plants should be taken up as soon as they have done flowering, and hung up by the heels against a south wall, or any convenient place, and exposed to the sun and air. If the plants cannot be gathered in till late in the season, they may be placed in a greenhouse not fully employed, and when quite dry, stowed away until wanted for use. When used, the dry plants should be chopped up, leaf and stalk, and about one third part of tobacco-paper mixed with it for fumigating purposes.—W. L.

EPPS'S SELECTED PEAT.—Mr James Epps, Lewisham, Kent, has sent us a sample of his selected peat, for choice plants, Orchids, Ferns, &c. The quality of the peat seems unexceptionable, and we think it well worthy of being commended to our readers, especially as some plant-cultivators are often at a loss where to obtain such an article.

CULTIVATION OF FRUIT TREES.—Rivers's 'Miniature Fruit-garden' would probably suit you, or Thomson's 'Gardener's Assistant,' or the English translation of De Bruill, by Wardle. The name of this Correspondent has been unfortunately mislaid.



THE GARDENER.

NOVEMBER 1870.



AMATEUR ROSE-GROWING.



ONE is really led to ask, What becomes of the tens of thousands of budded and grafted Roses that are annually sent out from our nurseries? Are we to assume that they go on from year to year constituting positive additions to our existing Rose-gardens? Or are we, on the other hand, to acknowledge that these large numbers chiefly serve a purpose of maintaining, in a slightly extended form, our present Rose-plantations, by filling up the ranks of those that have been decimated by disease, starvation, and death? Is it not a certain fact that the culture and growth of Roses either in the form of standards budded on the Brier, or as dwarfs on the Manetti stock, decidedly unpopular amongst the great mass of amateur growers, and also amongst a few of the professional gardeners, as they find a Rose, when grown under these artificial conditions, to be amongst all our hardy plants the most sickly, and liable to speedy exhaustion? There are reasons for this tendency to decay, of course, and it is worth while trying to discover them, although, perhaps, there are not a dozen readers of the 'Gardener' to whose minds these same thoughts have not already presented themselves, and who have felt the miseries attendant upon Rose-cultivation if they have limited their operations exclusively to budded or grafted plants. My earliest collections of budded Roses date back for many years, and although that long period the propagation of them has been going on generally by millions; and yet, could we but take a census of our stock of living Roses and compare it with what has been worked during the last twenty years, should we not exclaim, "How can this thing be?"

But I shall perhaps be told it is preposterous to expect any Rose to live for twenty years. Why preposterous? Is it not a perfectly hardy shrub, capable of any amount of extension, withstanding cold or heat alike almost with impunity? And if this is its character, why *should it* not live twenty years as well as any other bush or shrub? I am not unconscious of another point that may be told against my position, and that is this—from year to year older kinds of Roses are deliberately destroyed to make way for newer kinds. This may be true in some instances, but I greatly doubt its general application. We are, as a people, far too conservative in our likes and dislikes to part with favourite old Roses if they thrive well; but if this point has any force at all, it will be found to be strongest in the fact that older kinds are constantly being replaced by others, simply because the former have proved to be failures. The conditions essential to artificial Rose-cultivation—that is, to plants worked on artificial stocks—are clean bottoms and hard pruning. These two conditions constitute the death-warrant of tens of thousands of Roses. Let it be understood that I am applying this assertion solely to standards and those worked as dwarfs upon the Manetti stock. To pillar, wall, or other trained Roses, it does not apply, as hard pruning is not essential to them, fortunately for the continuity of their existence. Most climbing Roses are upon their own roots, so that their chances of continual reinvigoration by means of suckers or root-growth is assured. But the standard Rose worked upon the Brier must have no root-growths, as all such are looked upon as robbers to be at once annihilated; whilst the exigencies of their position compel the cultivator to keep the size of their heads within rigidly-prescribed limits. Then take the Manetti stock, so highly eulogised as an instrument of Rose-growth, but which, at least to those who have purchased it, has proved to be the source of continual disappointment. What amateur grower ever yet succeeded *afterwards* in obtaining from the Manetti such superb growths as were upon it when it was purchased from the nursery—so rich, so luxuriant, so full of promise? and when it is planted in rich deep soil, well manured and not deficient in moisture, and these long growths cut back in the spring to something like fair proportions, is it possible to produce its like again? I say seldom, if ever, from the budded Rose, but plenty from the root. Nature's first law with the Manetti is self-preservation; and to promote this it thrusts up from the base of its stem or its roots a lot of luxuriant growths that, by the untutored, are believed to be made by the Rose itself, whilst the experienced cultivator cuts them away, but only to realise that he must have that or nothing.

How, then, would I have Roses grown? I reply, Upon their own roots. Mr C. J. Perry of Castle Bromwich, a famous amateur

grower, once said : “ No doubt the Manetti is very serviceable to those who require to propagate Roses in large quantities, but, as a permanent stock, I have for it a great dislike, *and never plant Roses worked upon it* except the new ones, which, as dwarfs, I cannot obtain in any other form.” And again he says : “ I have for several years noticed that, if any of the plants in my beds of dwarf-Roses (which consist entirely of those on the Manetti and those on their own roots) die, they are sure to be those on the Manetti. . . . I would rather give three times the price for Roses on their own roots than for those on the Manetti, even if the latter were the largest.” This is a very pronounced opinion, and one entitled to all possible respect. It is an opinion in which I cheerfully and cordially coincide, not only because it truly expresses my own views, but, I believe also, those of many other amateur Rose-cultivators.

After all, this long introduction is simply intended to lead the reader on to the consideration of this very important point—how most successfully to grow Roses. I write for the benefit of my fellow-amateur Rose-growers, as one who has done his best to solve this problem for himself; and my conclusions are these: 1st, Purchase or propagate plants on their own roots—that is to say, struck from cuttings; and 2d, Grow them in beds or lines under the pegging-down system. Here, in these two conditions, will be found the secret of success.

The Rose is very accommodating as to the nature of the soil in which it will grow, but it specially delights in depth. Newly-made ground, where a lot of rubbish of all kinds has been deposited, and with from 2 to 3 feet of fairly good soil on the surface, is just the place whereon to plant them—the drainage is good, and there is abundance of room for the roots to travel in without feeling the effects of drought. This is a much more important consideration than mulching or watering. However, I presume it is not convenient to every one to have such a place in which to plant Roses; but by the expenditure of a little extra labour it is possible to make the future home of the plants somewhat closely to approach these important conditions, and, having added thereto a moderate quantity of well-rotted manure, get the Roses planted out about $2\frac{1}{2}$ feet apart in the month of November, and cut all the growth back hard in the following March. From the base of each will spring up shoots that will attain to a height of from 4 to 6 feet. Almost all of these shoots will carry autumn flowers.

During the summer the beds should be kept very clean, and well stirred, and in the winter receive a top-dressing of manure. In the following February the shoots must be shortened to a length of from 20 to 14 inches, and then brought down and fastened within an inch

or two of the ground by means of stout wooden pegs, in whichever direction may seem to be most convenient. From henceforth the plants may be looked upon as permanently established; and the cultivator has but to gather his flowers in the summer and autumn, cut out all the old wood, and cleanse and dress the bed in the winter, and shorten back and peg down the young growth early in the following spring. This, then, will be for many years to come the annually-recurring routine of labour necessary to be performed. The advantages presented by this mode of cultivation are many and obvious. It permits the Rose to exist under the most natural conditions, and to develop suckers or root-growth to an unlimited extent. Such strong shoots as are annually sent up also aid the root-extension wonderfully, the limitation to which can only be found in the depth or space prepared beforehand. Then the whole of the flowers can be seen with perfect ease, as the lateral growth all comes upward, and forms in time a perfect mass of foliage and colour; the whole of the soil, also, is effectually shaded, and is kept cool and moist in hot weather. The period of blooming is also greatly prolonged, as the buds at the point of the shoots start first, and are succeeded by those nearer the base; these, again, being followed by the summer growth from the roots, which, as I have before mentioned, carry bloom all through the autumn.

Mr Perry has long been a bold practiser of the pegging system, and earnestly recommends it. He has beds of more than twelve years' planting, and yet they are as strong and vigorous as ever—indeed it would be difficult to prescribe the period that Roses might last under this mode of growth. In planting beds of Roses that are to be treated as here described, care should be exercised to keep the more robust growers in the centre, and the weaker ones on the outside. Hybrid Perpetuals and Bourbons are best for this kind of work. Tea-Roses it does not suit; but these latter should invariably be grown upon walls or as climbers. The Brier and Manetti stocks may be very useful for the purpose of quickly obtaining plants of new or scarce varieties, but, for all permanent work, nothing can beat the culture of Roses upon their own roots.

ROSARIAN.



NOTES OF THE MONTH.

At last, after much patient waiting, there has come a break in the weather, and the long-continued drought that almost without intermission had lasted from March till the middle of October, has come

to an end. This—in so far as relates to the London district, and others similarly affected. A drought, almost unexampled in its intensity and duration, had settled down on the land like a spell, and fields became as dry and barren as if a fire had passed over their surface, robbing them of their verdure. It is seldom that anxious aspirations for rain have expression given to them as late in the year as October; but it has been so, and hedgerows have looked as parched as they usually do in the hottest July weather. On the morning of the 10th of October, the neighbourhood round London, and for many miles in every direction, was visited with a white frost; on the following morning this was continued with some severity; and then the wind changed to a southerly point, and the sky became overcast; then getting more westerly, the wind freshened into a severe gale, and for some eighteen hours a hurricane swept the face of the country, uprooting trees, or tearing limbs from their strong sturdy trunks, and wresting from them the leaves, already becoming sear and yellow; then, softening to a southerly breeze, the rain came—and now a glorious and much-needed fall is taking place. And so there comes to a close a season of drought many grey-headed men have asserted to be unprecedented in their past experience.

Probably the unusual swarms of insect life that have prevailed during the past few weeks are simply one of the results of the drought. Many districts have suffered from a kind of plague of small flies, so numerous that the ground was literally covered with them, and the air filled with them also. When the sun was shining brightest, then did these visitants swarm in myriads: in some instances they settled on the fruit-trees and devoured the leaves; healthy young Peach-trees were so infested with them that the weight actually broke off the leaves; trees that were healthy and clean a few days previously became covered with green-fly in consequence of the visitation, and fell into a very bad condition; and the green crops suffered severely from their ravages. This unpleasant experience appears to have been spread over a considerable tract of country. Those who were partridge-shooting after the frosty nights of the 12th and 13th of September were struck with the failure of the young Turnips, and saw myriads of insects similar to American blight devastating the leaves. In this instance it was supposed these insects were the production of the frosty nights; that the cold nights tended to put a stop to the rapid growth of vegetation; the hot sun, shining forth with an intensity more befitting June than September, had a putrefying action on the plants—and in consequence insect life burst forth *instanter*, and hence the swarms seen as described. Perhaps this theory of production is more ingenious than correct, but it is given as a theory. In relation to the

plague of black flies, the Rev. John Fountaine, of Brandon, Suffolk, has supplied some very interesting information to the 'Gardeners' Chronicle.' Mr Fountaine states: "They had not been long upon the leaves before they were surrounded with a number of green lice: upon watching carefully, it was evident that these lice were produced (and, as I thought, alive) by the black flies. A further examination with a strong glass confirmed this supposition unmistakably. Not only did the young travel about as soon as deposited, but were alive and kicking during the process of parturition, which occupied some minutes. To confirm this fact still further, I held some of the black flies between the finger and thumb of the left hand, and squeezed them gently whilst watching with the glass held in the right hand. The result was—first the green aphids quite alive; secondly, ditto in an imperfect state; and thirdly, a lump of green matter in the embryo state. I do not think each fly brought forth above a dozen young ones, but of this I will not speak positively. After they had, however, completed that quantity, they appeared to shrivel up and die." Mr Webster, of Gordon Castle Gardens, also furnished some information in regard to this matter. He states that a plague of flies is not uncommon there in the autumn, although by no means to the same numerical extent as this season. They are commonly known in that locality as the harvest-midge. "The Peach seems a favourite tree for reproducing the species. In a few days after settling upon the leaves an increased number of brown aphides will be seen, especially along the main rib of the leaf, which very soon exhausts its strength in its ripening stage, and causes it to droop while it is yet green, much corresponding to the effects of *Physalea Pyrea*, which we have more or less every season upon some of the wall Pear-trees." Mr Webster does not think it is the weight of the flies merely that causes the leaves to fall; and he goes on to state: "I have been on the look-out for it (the aphid) in dry autumns; and as soon as any are observed on the Peach-leaves, they are syringed over with Gishurst compound, at 2 oz. to the gallon, which helps to taint the leaves, and prevents these pests from having a resting-place. Several of the trees, having fruit upon them this season when the fly was first seen, could not be so easily washed over, and have in consequence lost a large portion of their leaves; but all those which were taken in time have suffered but little. I deem it of the utmost importance to keep the leaves on until they drop by natural ripeness, which will generally insure a strong healthy blossom in spring."

There may be some connection between the ravages of the Pine-beetle and the drought; certain it is that this destructive little insect has left unmistakable evidences of his presence in some districts this season. His visitations have more interest for the arboriculturist than

the gardener, but his presence is worthy of note. A small shining black fellow, his very build is suggestive of capacities for working mischief; and settling on the Scotch Fir, he works his way into the young growth, and tunnelling along the centre of it towards the point, devours its pith, and the shoots shrivel speedily. A large plantation of *Pinus sylvestris*, growing in the neighbourhood of Bagshot, Surrey, looked as if the surface of the tree had been burned with fire. It would seem this beetle attacks all the true Pines, such as *P. Austriaca*, *P. strobus*, &c., but avoids *Abies*, *Picea*, and *Wellingtonia*. Though somewhat pigmy in appearance, this beetle is a formidable foe to planters if he works out his mischievous tendencies similarly as witnessed in this Surrey plantation of Scotch Fir.

It is very rarely indeed that well-known creeper *Wistaria Sinensis* produces seed-pods. The fact that in one instance it has done so during the past summer is perhaps also traceable to the drought. When Mr Fortune returned home from his second journey to China, he brought with him five seeds of *Wistaria Sinensis*. A plant obtained from one of these seeds is now growing in Mr Charles Noble's Sunningdale Nursery, at Bagshot, and this plant has this season produced two pods of seed hanging on one stem. In appearance the seed-pods resemble those of a Scarlet-Runner Bean, but are gathered in, as it were, between each seed, so having an indented appearance. One pod contained three seeds, the other two. A plant of the white variety of *Wistaria Sinensis*, one of the original plants brought home by Mr Fortune, and growing on a cottage in the same nursery, had bloomed very freely this season—unusually so, probably because a dry season is apt to produce a more floriferous quality.

The fungologists had a grand field-day at South Kensington on the 5th of October last. "Such bad weather for the production of Fungi as that experienced for many weeks previous to the exhibition had not been known for years. The sun had continually shone with depressing brightness and warmth, the air had been free from delightful and exhilarating fogs, there had been no drenching rains, no slush, no mud, no nothing. Spores were down, and mycelium paralysed. The enemies of Fungus-eating prophesied a failure; they said 'vegetable beefsteaks' would be as rare at South Kensington as bovine steaks at Strasburg, and it would be no good seeking for *Hydnums*. But the prophets were altogether off the scent; Fungi in the woods and fields were certainly scarce enough, but the various species shown at South Kensington." So writes Mr Worthington G. Smith in the 'Gardeners' Chronicle.' Notwithstanding, some very good collections were staged; the edible species in one group, the poisonous in another, and the doubtful ones by themselves; and the leading myco-

logists and mycophagists were gathered together on the occasion. The number of persons attracted to witness the exhibition was something extraordinary ; all the afternoon the council chamber was thronged, and up till a late period of the afternoon the stream set in towards the tables on which the Fungi lay. Subsequently, a gathering of fungologists took place at Hereford—a large number of gentlemen met together, and the meeting appeared to have been successful in the highest degree. In the name of science, and in the interest of gastronomy, we thank these gentlemen for their work ; the practical utility of it time alone will demonstrate.



THE CULTIVATION OF HARDY FRUITS.

THE PEACH AND NECTARINE.

(Continued from page 457.)

THE reader will no doubt have observed that in all cases early autumn has been the season recommended for planting the various fruit-trees I have brought under his notice. In the case of the Peach and Nectarine it is perhaps of even greater moment than with any other fruits already named. The earlier in autumn the operation of planting is done—say after the middle of August—the greater will be the chances of success ; if left till spring, the later in spring it is performed, the greater will be the chances of failure and permanent injury to the young tree. This is easily accounted for. The Peach starts early into activity in spring, so that if transplanted after the sap is in full flow, the check occasioned by the sudden change proves often very injurious by deranging the whole system of the tree for a time. Its means of providing nourishment are for a time destroyed until it has become fixed in its new situation and begun to form young spongioles. This being the case, all activity in the tree is for a time suspended ; and if the weather should be dry, the wood, and even the buds, will to a certain extent become shrivelled. It takes no great amount of physiological reasoning to prove the injurious effects of planting under such circumstances. By planting in autumn all this is avoided, and the young tree gets time to settle into its new position and form young roots, which are ready at the first call of spring to start and carry on the work of the season. If planting in autumn cannot be done, the next best plan is to lift the young trees in December or January, when they are at rest, and put them in by the heels in some sheltered corner until their permanent quarters are ready for them. Here they should not remain longer than the end of February ere

planted. The nearer the surface the Peach and Nectarine are planted the better. It is a common practice—and a good one, especially in wet, cold localities—to spread out the young roots on the surface, and cover them over to the depth of 6 or 8 inches, thus leaving the young tree standing upon a little mound. The stem of the tree should not be nearer to the wall than 5 or 6 inches, thereby giving it ample space to swell and grow without coming in contact with the wall, which is very hurtful to the tree, and also in time gives it an unsightly appearance. If the tree is planted in autumn it would be well to give it, in the first place, a good mulching to prevent evaporation, and afterwards to ward off the frosts of winter from its young and delicate roots. If planting is not done till spring, there will be no need for mulching till the middle or end of April, unless severe frost should succeed the operation; in that case, by every means have it done. If, however, the weather should be genial and warm, the influence of the sun upon the soil will prove of much benefit until such time as its rays become too strong and cause rapid evaporation, after which a good mulching will prove of much benefit. It should, however, be removed early in August, as the young tree will now be established, and will not require it the same as when first planted; the truth is, it will be beneficial to the tree to have the soil around its roots then exposed to the action of light and air.

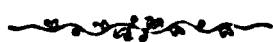
The style of training generally adopted for the Peach and Nectarine is the fan in one or other of its modifications. No other style can well be applied to it, considering the manner of its growth and the way in which its wood and fruit-buds are produced. As indicated in my last paper, some cultivators have attempted a sort of spur style of pruning. Of this I do not approve; but beyond this there are two other methods of pruning in general practice, either of which in different circumstances will be found very good. In both cases the wood intended to be cut is taken entirely away, and no semblance of a spur is allowed to remain. The difference consists in the advocates of the one system leaving the shoot entire, while the advocates of the other remove the point of the shoot left, generally cutting back to the first wood-bud beyond the first fruit-bud upon the shoot. Now in practice the one may be right under certain circumstances, and the other wrong, while if the circumstances were changed the reverse might be the case. My practice has been to adopt both of these methods. When the tree is young, healthy, and vigorous, I consider it best to cut the point out of the shoot, always cutting at a good wood-bud in front of the best fruit-buds upon the shoot. If the shoot were left entire upon a tree, such as I have indicated, the sure result would be that the point bud would start first into rapid growth, mak-

ing a too strong and probably unhealthy shoot, while all, or nearly all, the back buds would remain dormant, thus causing the tree to form its growths far from home, the inevitable result of which would be the leaving of the tree bare of young wood and foliage save at the extremities. Now by pruning as I propose this is avoided, and a well-furnished tree is the consequence. In the case of an old tree it is very different. When a Peach or Nectarine tree has arrived at a certain age it generally ceases to a great extent to produce what are usually known as gross watery shoots. At this age it also begins to produce its young wood and fruit more regularly all over the tree; the fruit-buds often predominate over the wood-buds to such an extent that sometimes the whole shoot is clothed by them except the point bud and a few others down near the base of the branch. Where the tree has arrived at this stage of its existence there should be no pointing of the shoots, as all the wood-buds produced will be necessary to bring forward and perfect the crop. Besides all this, it is sometimes the case that old trees drop a great many of their buds during the period of rest; but in no case have I ever known the point bud to fall; so that should all, or nearly all, the wood-buds fall save this one at the point, it should be left so that it may carry the fruit through to the period of ripening. As already stated, both of these methods may in practice be correct, but I have indicated to the best of my ability the circumstances under which each of them may be followed with the greatest safety.

The next point for consideration is the protection of the blossoms from the effects of frost. As the Peach and Nectarine produce their expanded flowers early in the season, and before the leaves of the trees are sufficiently developed to afford them any natural protection, it is absolutely necessary that some artificial means be adopted to insure their safety. This will be all the more obvious when we consider that the Peach is a native of such a genial climate as Persia. It is therefore necessary that some sort of protection be obtained, and I know of nothing better suited for the purpose than the woollen netting already recommended when speaking of the protection of the Apricot, at page 349 of the present volume. For full particulars regarding it, and the manner of its application, I must refer the reader to that article. Much of the success of Peach and Nectarine culture depends upon proper attention to this important matter. Not only is protection necessary for the blossoms, but the young leaves and shoots so often suffer from late spring frosts that it is as necessary for them as for the flowers. The woollen netting should be allowed to remain for the protection of the trees till the middle of May. Progressing with the season, the next thing requiring notice is the thinning of the

fruit. If the season is good, and the tree in perfect health, more fruit will set than is required to form a crop. This being the case, it is necessary to go over the trees when the fruit is about the size of Peas, to remove all superfluous or badly-formed fruit, leaving the best ones single, and at distances of from 4 to 6 inches apart all over the tree ; the small-growing varieties at the former distance, and the larger-growing at the latter. Even at these distances there will be four times the number of fruit necessary ; but as the crop is not secure till after the stoning period, they can remain and be afterwards thinned out to 9 inches and 12 inches apart respectively, according to the size of the fruit. At these distances the weight of crop and quality of the fruit will be better than if less space is allowed them. JAMES M'MILLAN.

(To be continued.)



HOW I GROW MY ASTERS.

I AM both a grower and exhibitor of the Aster, and at the end of the season I take up my pen to detail my experiences of the sorts I, during the summer, took in hand for the purpose of growing for exhibition. I take it for granted some of your readers are exhibitors of flowers, and probably among them will be found those who grow the Aster for competition. I hope, therefore, to make my remarks acceptable to some of these.

Much as I admire and gloat over the superb beauty of a stand of finely-finished blooms of the quilled or German Aster, I am fully alive to the fact that much high feeding and disbudding is necessary to produce these fine flowers. I don't take kindly to them somehow. As a general rule, they are dull-coloured, and, unless the plants are protected, they are apt to have a cloudy and even dirty appearance. I have given up growing the quilled Asters, both for exhibition and decorative purposes : the latter, because of the reasons just named ; the former, because I got tired of almost entirely stripping my plants of buds and side shoots for the sake of obtaining two or three flowers on each, fit for the exhibition-table. One has to manure, and water, and shade, and bestow the most careful tending, just to obtain a few blooms, which may perhaps fail one just when they are most needed.

In what are known as the flat-petalled Asters I get something to my mind ; and I grow them, and enjoy the rich full harvest of flowers they yield. Of these I grow four types—viz., Truffaut's Peony-flowered, which give both reflexed and incurved flowers of large size, and in good variety of colours ; the Victoria, which I have no hesitation in pronouncing the finest Aster in cultivation ; the

dwarf Chrysanthemum-flowered, one of the most useful kinds, both of which produce handsome and symmetrically-shaped flowers ; and the Crown-flowered, so named because of having a large disc of white in the centre of the blooms. These four I now rely on to furnish me with collections of flowers for the annual struggles in our district in the month of August.

Truffaut's Aster is tall in growth, and frequently ungainly in habit, but I like it because it is so certain. One can always cut plenty of good flowers from plants that have not had special attention. It is an Aster that affords as much variation in colour as any kind I know of. I grew this season the seed from a collection of Truffaut's Aster in eight varieties, and at any time I could have cut as many as twelve blooms differing materially in the hue of colour, saying nothing about softer and heavier shades of apparently the same variety, and the difference in the flowers from the same plant occasioned by their relative age. The flowers also vary in form, but by far the greatest number are raised in the centre, the petals folding over from the outside towards the centre, and they are then known as "in-curved" flowers. In this form they are very handsome when staged for exhibition. Another form is the "reflexed" flowers—in these the petals are thrown back from the centre to the circumference of the blooms. In this way they are also very handsome ; but the difficulty is to get the centre full and raised, and of a uniform hue of colour with the other portion of the flower. I had two kinds of the Chrysanthemum-flowered Aster—one as tall-growing as Truffaut's, the other the ordinary form of the dwarf-growing kind. Both are very handsome and varied in colour, though not so varied in form, but somewhat late in flowering ; and the grower does not get the best flowers in time for the early Aster shows. The flowers are of large size, and very full. The dwarf Chrysanthemum-flowered is very compact in habit of growth ; and I often wonder beds of this variety are not more frequently planted out in large flower-gardens. The Victoria Aster is a splendid and sure kind for exhibition purposes, and without exception the finest Aster grown. The habit of growth is erect, and reaches a height of about 12 inches. It does not present so many dense hues of colour as Truffaut's, yet the flowers are large and full, and of considerable depth. Year by year some new shade of colour appears to be added, and a greater diversity of hue is thereby obtained. I find, however, that some of the most decided colours to be obtained in the Aster are found in the Victoria type—such as crimson, blue, purple, rose, carmine, and white. This fine Aster simply wants rich soil, plenty of moisture and room ; and I am persuaded the cultivator will never abandon it when once he has made a trial of it.

Though my remarks are mainly directed to the use of the Aster as an exhibition-flower, its usefulness for decorative purposes must not be overlooked. Scarcely anything is so gay or so pleasant to the eye as a border well studded with Asters; and scarcely is anything more useful during the summer months. But none of the tall-growing types that have the habit of hanging down their flowers, as if always in a dejected mood, should be employed for the purpose. There are one or two dwarf-growing types of the quilled flowers that are very useful for the purpose, but give me the Victoria and the dwarf Chrysanthemum-flowered. I sometimes amuse myself by looking over the seed catalogues at the lists of the different types of Asters therein arranged, and I am led to fancy they are constructed especially to bewilder and torment poor unsuspecting folk, who cannot know much about them. I have bought much rubbish in this way in the time past, but I have done with that for ever. I now know something about Asters, and I always get for my money that which amply repays me; and because I am anxious other growers should not be disappointed I have here set down my Aster experiences.

I sow later than sowing is sometimes done. The end of March, or the beginning of April, is my time for doing it. I plant out in small beds, putting the plants in lines about 12 inches apart, and the plants about 9 inches apart in the row. Some assure me I crowd my plants; I fancy I don't, and so continue to plant 9 inches apart. The beds are previously prepared by forking into the soil plenty of rotten manure, and working it well together till light and friable. When the plants get from 6 to 9 inches in height, I scoop out the soil between the rows to the depth of 3 inches, and fill up the space with some rotten manure, and I cover the surface of the beds with a layer of the same. Unless the weather is very dry, not much watering is required. When the blooms are filling out, those intended for the exhibition-table are helped with some weak liquid-manure; yet it is hardly essential. From plants grown in this way I get exceedingly fine blooms, and seldom do I miss taking the first prize at our local show the last week in August, though I have to fight hard to secure that honour. But in these days of severe competition we *must* fight if we would excel.

A bed of Asters is an admirable preparation for a plantation of Roses in the autumn. Those who contemplate making a Rose-bed should grow Asters the previous summer, and when they are removed, well trench the ground. If fine blooms of Roses are not produced the following season—well, then, I am but an indifferent prophet.

NEMO.

HINTS FOR AMATEURS.—NOVEMBER.

IN highly cultivated gardens, November is generally a busy month, as the work for a future season may be said to fairly commence then. There is also much storing to be done, and protecting and clearing off the remains of the past season's crops; and every means should be used to forward operations before winter sets in. Wheeling out manure, trenching, and otherwise preparing ground, may now be carried on judiciously and with all haste. It is also a good time to make arrangements for next year's cropping. A rough sketch of the ground and what it grew last season might be put on paper, and the necessary changes for next season also noted down. This saves much trouble, and reduces the management to great simplicity. Systematic cropping is of great advantage—especially where gardens are limited in space. It is well to arrange to have the root-crops by themselves; and where several crops are to come in at the same time, such as Celery, Leeks, Brussels Sprouts, and late Brocolis (which are winter crops), it makes easy work to turn over the soil after their removal, as great breadths can be done at one time, and the same ground answers for a number of summer and autumn crops, and can be manured accordingly. Where manure has been freely used the previous season, it may be withheld if the succeeding crop is not to be of an exhausting nature. Lime and sand in moderate quantities may be used freely in very heavy soil; and if the bottom is of a sandy nature, some of it may be incorporated with the surface with great advantage. Light sandy soils may be improved with a little clay placed on the surface, exposed to the winter's frost, and then well worked in with rotten manure; this will do much to improve the ground. Mud from the bottoms of ponds, or rivers, sweetened by frost, is of great service when used on poor light land. Some old fruit-tree borders here, trenched up and dressed in this way, produced excellent Kidney and Forty-fold Potatoes; after which were sown Turnips and Spinach, which promise to do good service all through the winter. While advocating the mixing of soils when entirely of an opposite nature to each other, I am strongly opposed to bringing up unhealthy subsoil unnecessarily to mix with good soil, as the mischief might not be overcome for years. The sowing of early Peas and Beans will now require attention. A warm sheltered spot, well turned up, should be chosen, and the seed sown (more thickly than usual) on the surface in drills and the earth drawn over. Where mice or other vermin may be troublesome, chopped furze thrown over the seed will keep them off. Red-lead sprinkled over before covering up often answers well. Keep Spinach, autumn-sown Onions, and other crops free from weeds, with a well-broken surface. Quantities of Parsnips, Chicory, Horse-Radish,

&c., should be taken up, in order to have a store on hand when frost sets in. Chicory (which is very wholesome in salad) when wanted for use, may be taken up and the tops trimmed off, and the roots placed in soil, where the tops will become blanched by being in the dark. A little warmth will bring them quickly into use. Brocoli coming into use can be lifted to save it from frost; it may be stored in a cellar, shed, or outhouse, keeping the roots and leaves entire. Where late Brocolis have grown strong, they are in danger of being destroyed by severe weather. They may be laid down with their heads from the sun, thus checking their growth. Where there are vacant spaces, such as where Peas have been cleared off, the late Brocolis may be thinned out and transplanted; damp and frost do great damage to strong gross plants. In dry weather all the Brassica tribe should be gone over and their decaying leaves taken off, as they would soon be offensive. Celery will require earthing-up to blanch it, keeping the hearts together and free from soil. Quantities lifted up with balls and placed in close quarters will keep well for weeks, and can be easily got at in severe weather. Endive and Lettuce fit for use may be lifted and placed under protection: an earth-pit with glass lights answers well for this purpose. Plenty of air in fine weather is necessary to keep the plants from decaying. Tomatoes (in positions not likely to ripen) should be taken into heat and they will soon change colour; when they are grown in pots they are easily removed to safe quarters. Mustard, Cress, and "Thread" Onions may be sown in small quantities, as demand requires. Sowing in boxes or pots, and placed in heat anywhere, and brought to light and air after the leaves begin to form, is a simple method of keeping up supplies. Rhubarb may be lifted for forcing—a few roots placed in a cellar, or where 55° to 60° of heat can be given; keep the roots close together, and slightly cover them with a little soil, litter, leaves, moss, or anything to retain moisture, and frequently sprinkle with tepid water. If the produce is wanted early, extra heat must be given, but the Rhubarb will then not be so large. Rhubarb, unlike Seakale, does not require blanching, but is better flavoured when grown in light and air: pots placed over the crowns, and manure used for warmth, is an old simple plan, but gives a good deal of labour, and is untidy-looking in gardens. Where there is a manure-heap, the roots can be carried there, and placed together in a box, and covered over with manure—it gives less labour to wheel the roots than the manure. When roots are done with, they should be hardened slowly, and then kept for dividing, to make fresh plantations. Seakale may be lifted in quantity. If it is not wanted before the end of the year, forcing need not begin till the middle of the month. Like Rhubarb, it is easier managed when lifted. In large

places, Mushroom-houses are generally used for forcing it into use, but amateurs and others may have it in a stable or any outhouse, if placed in a box in soil of any kind, and kept close, dark, and moist, with heat about 55° to 60° . The white tops will soon be fit for use; when allowed to grow more than 6 inches high, it becomes weak and worthless. Asparagus is also come-at-able by every one, as it only requires packing closely and tightly in a little good earth in a box: a glass light over it, and manure round it for warmth, will soon start the crowns, when a watering (say at 90°) will bring it on quickly. Light and air are necessary to give flavour; blanched Asparagus is not of much value. The three foregoing useful vegetables can be bought cheaply by those who have no ground, and grown in towns or anywhere.

Pruning of trees and bushes may be commenced, but avoiding the use of the knife when the wood is frozen. If birds are troublesome, pruning may stand over till late in the season, which is the least of the two evils; then the buds not destroyed can be retained. Keep up a regular supply of young wood among all fruit-trees; even those which are trained to long rods and spurs, such as Pears and early Cherries, are the better of having new shoots occasionally led up to replace old ones. Upright-growing shoots on bushes are preferable, as they do not bend so much with the weight of the crop. Currants may be closely spurred (except blacks, which require regulating and thinning the wood); but vigorous shoots left to form permanent ones may be left alone, yearly cutting out here and there an old one as they get stunted, when young healthy ones will take their places. There need not be any great haste with wall-trees; but Plums, Cherries, Pears, and Apples (where the latter may be on walls to get them extra fine), may be pruned while the weather is mild. Cut off spurs which are growing out from the walls; but any which have formed at the sides of main shoots should be retained, as they are likely to be fruit-bearing. Pears should have (if not done in summer management) the young wood shortened back to form spurs, and if placed outwardly, should be cut clean off. If spurs are crowded (which is often the case on old trees), they should be thinned, and some shortened, to keep the fruit near the wall. Crowding of Plums and Morello Cherries with young wood is often seen. The fruit is thus kept small and inferior in quality. Enough wood should be retained to secure plenty of fruit, but not to smother it. Peaches, Nectarines, and Apricots may be left till late in the season. When the leaves are off the trees the young wood can be taken from the walls with much benefit. The wood gets firm, and is kept from going quickly into growth, and is less likely to be destroyed by early frosts. This is an

old practice, and we have seen it proved to be a good one. Nailing in young wood of pruned trees can only be done with comfort in mild weather, so every opportunity should be taken to get the work forward. We seldom use shreds now, simply from the objection to the harbour for insects, and the appearance, especially if the cloth they are made from is "showy." Matting neatly used is hardly seen, and the nails may remain, as where systematic training is practised, the young shoot is taken from the base of the old one, and when the latter is cut out, the young one is laid in its stead. Cast-metal nails are best, and if not placed where they can be used on the walls, they may be broken over, thus saving the plaster. Holes in walls may be filled up with putty, mixed with a little white lead, and harbour for insects will be scarce. Trees infested with scale may be carefully scraped with the back of a knife, and painted with Gishurst compound (see directions for use): all moss on trees should be taken off if possible, and the bark well painted with a mixture of lime and soot. Root-pruning, if not already finished, should have attention at once. I always advise its being done early, and only when the tree requires it. Where any strong watery shoots are taking the lead upwards, some roots will be also taking the lead downwards, and should be cut off; but cutting right round the tree indiscriminately is unnecessary destruction. When trees are to be kept within certain limits, root-pruning is necessary to equalise the growth. When much wood is made and cut off, the tree soon yields to canker; but timely lifting prevents these evils; trees making no growth and abundance of fruit-buds should be helped with good top-dressing, or if roots are down in poor unhealthy soil, lifting will be the only means of securing success. Lifting and replanting fruit-bushes gives them a fine constitution; as well as modifying the growth of wood and insuring always abundance of fruit. Stake and tie securely newly-planted fruit-trees, but they must be allowed to settle with the fresh soil, otherwise the bark might be cut with the ties. Raspberries should already be freed from the old wood, and suckers not wanted should be lifted. Pruning will require attention soon. They require a good deep soil, rich and moist.

Lawns and shrubberies now require to be often gone over with rake or broom. Worm-casts on the former may be kept down by the use of lime-water, and well rolled afterwards. Where leaves are all down, quantities may be forked over among shrubs, keeping clear of the roots. To give grounds, however small, an interest at the dull season, thorough cleaning of grass, borders, and walks is necessary. Improvements and renovations can be done well at this season. Cover roots of Fuchsias, Aloysias, and other plants remaining in the

ground likely to be injured by frost. Fern or coal-ashes does well for the purpose. Myrtles or any other less hardy plants on walls might be covered with fern or spruce branches and straw. Tender Roses may be lifted, and their roots placed in soil under a wall or similar place, where they can be protected. Rose-planting may be finished without delay. Well-trenched heavy loam, in which is mixed plenty of good rotten manure, is most suitable. A quantity of fresh turfy loam placed with each plant in process of planting, will give health and vigour to the plants; a good mulching for protection after the planting is done will keep them safe from frost. The grafted parts should be well protected. Bedding and other plants now require careful attention; no more water should be given than is absolutely necessary, and always enough to moisten all the soil about the roots. Open clean surfaces do much for health. Impure damp air is a great evil. Hardy plants in pots, if not under cover, should have the roots plunged in coal-ashes. Heaths and Camellias, when mixed with other plants in structures, should be kept in the coolest end where air can be freely given, and the more tender things where they would be best protected from draughts, &c. Violets and Roses flowering in pots require plenty of air and light; also Primulas and Cinerarias to succeed Chrysanthemums; but they stand little frost.

M. T.



HOW TO OBTAIN ROSES ON THEIR OWN ROOTS.

I HAVE read in a contemporary an article under the heading of "Roses for Hedges." This is a good idea—one I, as an old Rose cultivator, have long believed in and practised. The month of November, into which we are just entering, is a busy time for me as a grower of Roses, as during that month I put in my cuttings, and plant Brier and Manetti stocks for budding. With regard to cuttings, it is of the greatest importance to get them all planted before severe frosts set in and the ground gets too cold. Although both the dog-Rose and Manetti are hardy, they are apt to suffer from the effect of frost if exposed to it after they are taken up, and weak shoots, instead of strong healthy growth, results.

In any place where there is a great demand for cut Roses, every exertion should be made to keep up a sufficient supply. I always make it a rule here to supply the table with cut Roses during eight months out of the twelve: in March and April I get blooms from plants

forced in pots ; in May from walls ; and from that time till the autumn has begun to strip the trees of their emerald tresses, the blooms come from various sources—some from plants budded on the Brier, some on the Manetti stock, and others from plants on their own roots. To obtain a good supply of Roses, three classes are principally grown—namely, Noisettes, which are mostly grown on walls, and protected with branches of evergreens during winter ; Tea-Roses, which are grown and protected the same way as the Noisettes—both of which I find to bloom earlier and finer from the protection they get, as the blooming wood is preserved intact, instead of being killed back, as is frequently the case ; and the Perpetuals, which form the largest class grown here. A great many of these are on their own roots, and these I obtain in a very simple manner. I first trench a piece of ground in the kitchen-garden, two spits deep, and mix plenty of rotten dung with the soil as the work proceeds. The cuttings I prepare in the following manner : I select the strongest growers of the Perpetual class, and cut up the wood into lengths of about 6 inches, and take out all the eyes but the three top ones. The ground should be trodden firm at planting time, and I always select for this a day dry enough to prevent the soil sticking to one's feet. A line is put across the ground, and the soil chopped away from the line by the spade just deep enough to take the cuttings, leaving the eyes out of the ground ; they are placed from 4 to 6 inches apart, and the soil trodden firmly about them. And so I plant a piece of ground, leaving a space between the rows of fully 2 feet. I find the cuttings strike more readily in a sandy soil, and generally place some road-grit about them previously to treading the earth firmly against them. Here the cuttings remain for two years. At the end of the first year the growth of that season is cut back to about four or six buds from the ground, and by the end of the second year they form fine healthy plants.

These I use for the formation of Rose-hedges, the front row of a Rose-border, for potting, for forcing purposes, or to form a bed of Roses on their own roots. The ten varieties of Perpetuals now to be named are very fine plants from cuttings struck this way three years ago, and they are all strong growers and constant bloomers—viz., General Jacqueminot, John Hopper, Jules Margottin, Anna Alexieff, Duchesse d'Orleans, Auguste Mie, Anna des Diesbach, Charles Lefebvre, Mademoiselle Louise Carigue, and Madame Alfred de Rougemont.

There are two hardy Tea-Scented Roses growing with the above that stood the severe frost of last winter without any protection—namely Gloire de Dijon, and L'Enfant Trouve, a beautiful yellow flowering kind.

If I were to form a Rose-hedge of one particular flower, it would

be Jules Margottin, an old but very free-blooming Rose, that is a great favourite with me, and, I doubt not, many more.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



ON PEACH-TREE TRAINING.

OLD writers (I use the term with all respect), and some young ones, borrowing from them, generally advise, in beginning with a young Peach-tree, to train up several shoots, to pick out the sublaterals, and cut back at the winter pruning to 9 inches or 1 foot—and so on from year to year; and to prevent an outburst of superabundant vigour thereby induced the following season, and perhaps gumming, will further advise you to root-prune annually, until a balance is effected between root and top.

By this system good trees and fruit can be secured, I am aware; but another system has been coming into repute of late years, which, I think, possesses not only all the advantages of the old plan, but enables us to get large trees in about half the time, or less, that was formerly required, and consequently quick returns.

To give your readers an idea of this plan, I perhaps cannot do better than give the history of two Peach-houses here that were planted in 1866.

Our old early Peach-house was taken down for the purpose of erecting two better and larger houses on the same site. The old trees could not be used again, and as we would be without early Peaches while the young trees were growing, I had recourse to the plan I have alluded to, and which I shall call the “extension system of Peach-tree culture.” The trees, with the exception of two which were got the year before, were brought from the nursery in the beginning of 1866. They each had from four to six strong immature shoots upon them, which were shortened back to about 1 foot, and the trees were planted permanently about the beginning of April, when the houses were furnished. From each of the cut-back limbs two or three shoots were trained, and these were encouraged not only to make all the growth they would in length, but all the sublaterals were also laid in that we could find room for, thereby expending the gross vigour of the main shoots, and at the same time laying in a stock of bearing-wood.

Instead of cutting away perhaps one-half or two-thirds of the season's growth at the winter pruning, as some recommend, we retained the whole of it, with the exception of some of the extreme points of the strongest shoots, which were cut off for the sake of preserving the

symmetry of the tree. By this method we had trees at the end of the first season measuring from 6 to 7 feet across, and about 4 feet high, and filled with bearing-wood all over, and which bore about 12 dozen fruit the following year, though all the trees did not bear. This practice we have continued up till this date, never pruning in winter or pinching in summer, unless here and there occasionally, to preserve the balance of vigour or to shorten back a bare point.

For the last three years the two houses have been forced early and hard, and the trees have borne a crop every year. This season we gathered over 56 dozen Peaches and Nectarines, fine fruit, from the two houses, each 25 feet long, and containing four trees, two dwarfs and two riders, all trained under the roof over the glass—the riders being cut away as the dwarf fan-trained trees in front overtake them. The Peach-trees measure now generally about 15 feet across, and are 10 feet high, and more than fill the space allotted to them; had they had room they would have been more than 20 feet in diameter by this time. The Nectarines are a little less in size. Two or three of the trees have been root-pruned once since planting. We trust rather to the roots expanding their energies through their natural outlets—wood and fruit; though, now that the trees are forced early, and well-ripened wood an object, we do not lay in any sublaterals: indeed we do not find this necessary, as the trees produce sufficient bearing-wood without.

J. SIMPSON.

WORTLEY HALL GARDENS.



POTATOES—THE EFFECT OF A CHANGE OF SEED ON THE PRODUCTION OF CROPS.

REAR-ADMIRAL HORNBY, of Knowsley Cottage, Prescott, Lancashire, has forwarded to us a table, giving the results of a trial of various sorts of Potatoes, in which the comparative productiveness of seed obtained from other localities was tested against that which had been grown in the neighbourhood. By a reference to the table, it will be seen that one column contains a list of twelve varieties, the sets of which had been grown at Knowsley Cottage. The other column contains a list of twenty varieties, the sets of which had been obtained from a distance—those marked with an asterisk having been obtained from Southampton last spring. A comparison of the relative produce given exhibits an extraordinary result in favour of a change of seed, especially in the case of some of the varieties—such as Yorkshire Hero, Early Emperor, Daintree's Kidney, Dawe's Matchless, Waterloo

Kidney, Early American Rose, Breese's Prolific, and The Queen ; the highest relative produce coming from Daintree's Kidney, in which instance 3½ lb. of Potatoes realised nearly 200 lb. In the first list we are pleased to see that Veitch's Improved Ashleaf, a first-rate new early Kidney of superior quality, takes a high place. In a note accompanying the table, the gallant Admiral states that all the kinds were "treated exactly alike, and were grown alongside each other in light soil, what we call in this country 'moss' soil ;" but what his particular mode of culture was he unfortunately omits to state.

POTATOES 1870.					Old Seed.	Produce.
Early Coldstream,	.	.	.	.	3½ lb.	43¾ lb.
Transell's Seedling,	.	.	.	.	"	63¾ "
Veitch's Improved Ashleaf,	.	.	.	.	"	112 "
Lemon Kidney,	.	.	.	.	"	50½ "
Mona's Pride,	.	.	.	.	"	46½ "
Little Green Kidney,	.	.	.	.	"	46¼ "
Daintree's Seedling,	.	.	.	.	"	71 "
Early Oxford,	.	.	.	.	"	86 "
Ready Penny,	.	.	.	.	"	62 "
Regent (Paterson's),	.	.	.	.	"	77½ "
Milky White,	.	.	.	.	"	61½ "
Royal Ashleaf,	.	.	.	.	"	57¾ "
					New Seed.	Produce.
*Gryffe Castle Seedling,	.	.	.	.	3½ lb.	65 lb.
*Yorkshire Hero,	.	.	.	.	"	124½ "
*Scotch Blue,	.	.	.	.	"	48¾ "
*Wormsley Kidney,	.	.	.	.	"	75½ "
*Redbridge Ashleaf,	.	.	.	.	"	71 "
*King of Flukes,	.	.	.	.	"	79 "
*Early Emperor,	.	.	.	.	"	140¼ "
*Alexandra,	.	.	.	.	"	73½ "
*Daintree's Kidney,	.	.	.	.	"	199½ "
*Gloucestershire Kidney,	.	.	.	.	"	52¼ "
*Dawe's Matchless,	.	.	.	.	"	157½ "
*Wellington,	.	.	.	.	"	88½ "
Early Coldstream,	.	.	.	.	"	71¼ "
Webb's Imperial Kidney,	.	.	.	.	"	122½ "
Harris's Nonpareil,	.	.	.	.	"	77¾ "
*Waterloo Kidney,	.	.	.	.	7 lb.	138½ "
Early Rose,	.	.	.	.	"	267¾ "
Breese's King of the Earlies,	.	.	.	.	3 lb.	71 "
Breese's Prolific,	.	.	.	.	"	137 "
The Queen,	.	.	.	.	"	115½ "



WHEN AND HOW TO LIFT AND STORE DAHLIA-ROOTS.

A FEW words on these points may perhaps prove to be words in season to many of our readers just now. For the present year the glory of the Dahlia has departed, for

“ November comes, with gloomy fogs begun,
Through which, dim-looming, frowns his furrowed face :
Like a huge globe of molten iron the sun
Seems labouring through upon his daily race.
All nature speaks of changing and decay,
Which is not death, but sleep, to cease in spring's bright day.”

These aspects of November bring with them cold days, and sharp white morning frosts, which soon have their effect on the beauty of the garden. Very shortly, therefore, the roots of Dahlias must be lifted and stored away for the winter.

It is somewhat singular that most writers on the cultivation of the Dahlia from some cause omit giving instructions how to keep the roots during winter. There are many different opinions current as to the best mode of doing this, and a variety of plans are carried out; but one that has borne the test of many years' experience is likely to have an interest for those anxious to be informed in regard to the matter.


Generally speaking, the roots of Dahlias are lifted in November. There is no great difficulty in keeping them through the winter. They should be got up on a dry day; but when taking them up, it is by no means necessary that all the soil should be shaken from the roots. A dry day is best, because the ground works better, and because the roots should be dried a little before storing them away for the winter. Some of the old school of florists, and probably some of a more modern date, used to wash their roots very carefully indeed from all soil adhering to them, and then dry them as some do Potatoes for exhibition purposes nowadays. Careful as they were, all their attention could not prevent the roots from decaying sometimes. Some growers made a point of keeping them in dry sand, packed in boxes: this was the plan recommended by James Hogg of Paddington, the renowned Pink cultivator. Some placed them in pits as they would Potatoes, and covered them with straw and mould. Others would strew them about an underground apartment. Some have been known to sew them up in a Russian mat and hang them up in the coal-cellar. Others would put them into dry mould and stow them away underneath the potting bench. One enthusiastic amateur grower used to hang his roots round the walls of his kitchen, in the hope of thus escaping all chances of disappointment; rot they could not, at least from damp, and freeze they could not, for the kitchen fire prevented that. Another, no doubt quite as enthusiastic in the matter, recommended that, “for the tender small bulbs which will not bear drying too much, that they be potted on taking them up from the ground, and have a slight watering to close the mould about the roots, and then kept in the dry till wanted.” Generally, among amateur growers, this dry place was the kitchen or

sitting-room. It was contended that "the roots, in short, require to be only kept from heat, frost, and wet;" and to those who had hitherto failed to preserve their roots during winter, the following piece of advice was tendered: "To let the roots dry the same as they would a bulb or a pod of seed before they are stored, for if put away damp there is great danger of the rot."

Now for a more modern, but in our own experience as well, thoroughly successful, mode of wintering the roots of the Dahlia: "Select a dry day for getting them up, cut the tops clean off to within an inch of the crown with a small saw, lay the roots on some sticks or flattened boughs, so placed in the ground that the air can pass through them, with the neck downwards, and with as much soil in the tubers as will remain after they have been poked with a small stick, which is the best tool to remove the soil with. If the weather is fine and dry, the roots may be removed to their winter quarters in three days, care having been taken that they have been covered with mats at night, and the covering taken off each morning. The floor of a greenhouse I consider the most suitable place in which to keep them during the winter; or, if the grower does not possess a greenhouse, a dry cellar will answer the purpose, or any room where frost will not penetrate. A little ventilation is always necessary to prevent mould. When valuable roots, such as seedlings or other scarce kinds, are required to be kept in plump condition for early forcing, I would recommend that they be taken up from the ground with all the soil that can be lifted with them, and that they be at once placed in large pots in a dry place."

The writer of these valuable directions (Mr C. J. Perry of Castle Bromwich) also alludes in a somewhat amusing style to an error sometimes committed by growers—"that of drying the roots too much. Many a time," he says, "have I seen them suspended in some coach-house or loft, until nearly all the juices have been dried out of them. They were then consigned to a warm room, where no frost could penetrate, and by the time they were required for propagating, half the tubers were as dry as old sticks."

A great deal depends on properly drying the roots previous to stowing them away: they should never be dried up so as to present a shrivelled appearance, but merely the surface of the tubers dried, and the stems cut off as recommended. None of the greener portion of the stem should be left, as it would certainly decay during winter, and endanger the crown, which is the portion of the root most necessary to be preserved. Those who have a greenhouse can keep the roots well under the stage, which is a good place for the purpose, excepting only that they usually give a slovenly appearance to the house, which ought always to be a picture of neatness.

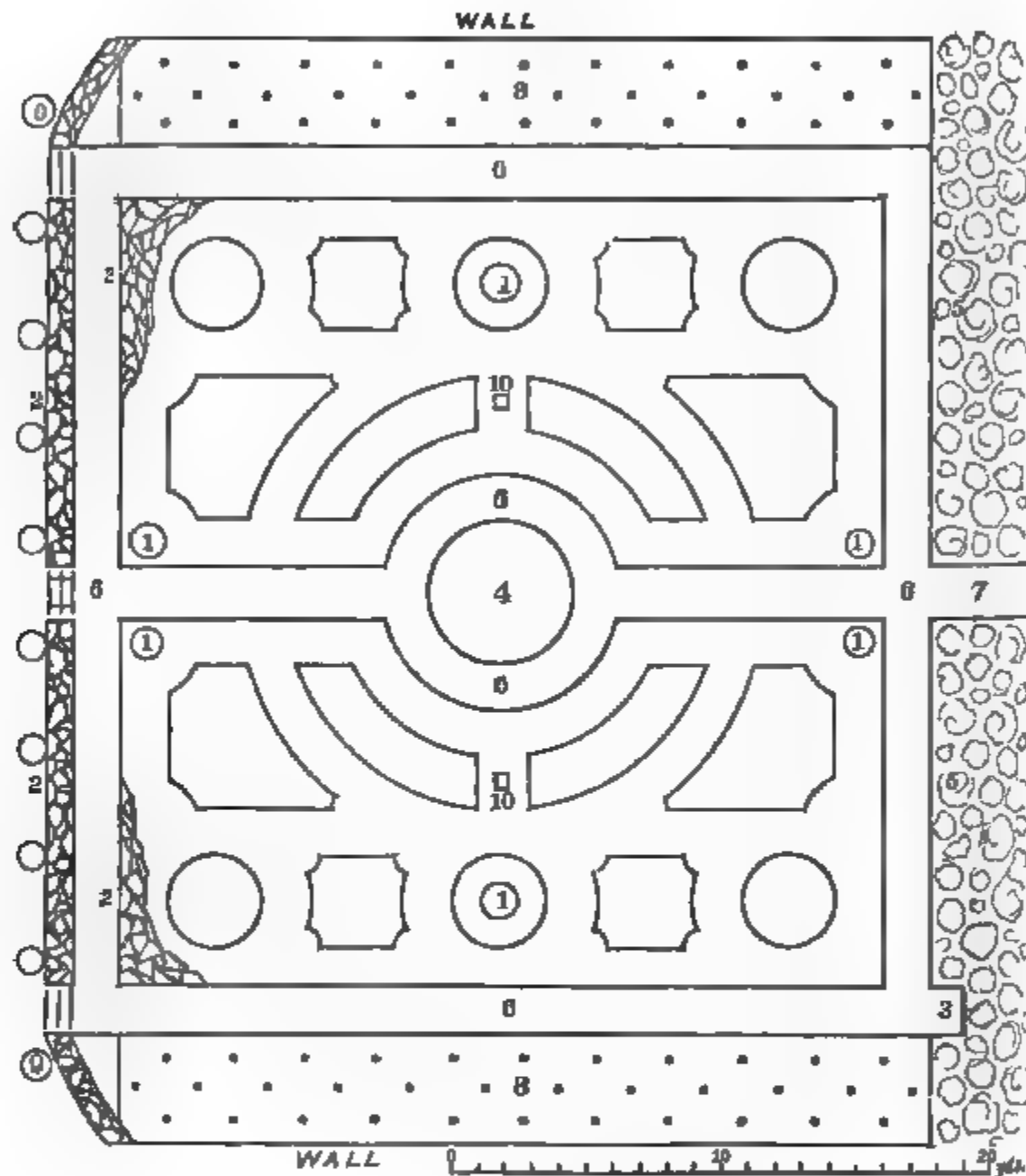


**FLOWER-GARDEN AT EALING PARK, MIDDLESEX,
THE RESIDENCE OF J. S. BUDGETT, ESQ.**

THERE must be many gardeners and others about the country who have lively recollections of and still feel an interest in the place so long and famously associated with the late Mrs Lawrence and her almost unrivalled collections of plants. Those who remember the Chiswick exhibitions of old—now living only in the records of a glorious past—must also have memories of the display Mrs Lawrence used to make in the days of her great popularity as an exhibitor. Some who worked there and gained a knowledge of the first rudiments of their profession at Ealing Park, others who have visited it at some time or the other, and many more who have only heard of the wealth of plants to be once seen there, and the breakfast-parties that used to draw together the *élite* of aristocratic and fashionable society, will all be interested in hearing again of the place, and knowing whether any of its former splendid reputation still survives. The block of plant-houses, the occupants of which used to excite the envy and wonder of the horticultural world, are gone, but there is no lack of glass at Ealing Park notwithstanding. The plan of the flower-garden now engraved is on the site of the old flower-garden of Mrs Lawrence, and it occupies a piece of ground nearly square in shape on the south side of the site of the once famous plant-houses. When Mrs Lawrence resided here, the flower-garden contained twenty-nine pincushion beds set down very closely together. Mr William Cole, the gardener at Ealing Park, has altogether altered the details of this garden, and its present arrangements can now be seen by a reference to the accompanying plan.

The line of vases on the left hand of the plan (9) occupies a higher elevation than the flower-garden, which is reached by three flights of steps at different points. The vases are planted both for summer and winter display, and are always a pleasant feature of the garden. Starting from the bottom of the page, the line of vases runs almost directly west to east. The sloping bank of rockwork, which is continued all along on the north side of the flower-garden, is about 6 feet in height, and is covered with various Ivies, *Arabis albida*, *Aubrietias*, a variety of *Sedums*, *Helianthemums*, *Alyssum saxatile*, *Iberis sempervirens*, *Corydalis lutea*, &c. ; and during summer there are various Peas and suchlike to lend their quota of effectiveness. This arrangement gives an almost unbroken succession of bloom, as something or the other continues almost to the time the charming soft-coloured *Aubrietias* unfold their blossoms in the early spring months. There are also two such pieces of rockwork set down at the

angles immediately contiguous, marked 2. On the east, as also on the west sides, the garden is bounded by a wall, against which grow Tea-Roses and various creepers; and the herbaceous borders



GROUND-PLAN OF FLOWER-GARDEN AT EALING PARK, MIDDLESEX,
THE RESIDENCE OF J. S. BUDGETT, ESQ.

- | | |
|-------------------------------|---|
| 1. Vases. | 6. Gravel-walks. |
| 2. Sloping banks of rockwork. | 7. Ivy bower. |
| 3. Summer-house. | 8. Herbaceous border and lines of standard Roses. |
| 4. Fountain. | 9. Line of Vases. |
| 5. Shrubbery borders. | 10. Statuary. |

flanking the walls, with their lines of standard Roses, are rarely without some flowers. A light iron fence forms the boundary on the south side of the garden, with shrubs planted next it, shutting it in from the pleasure-grounds outside. At 7 there is a glorious

bower of Ivy, under and through which a walk leads to the pleasure-grounds; when the fountain in the centre of the garden (4) is playing, a peep of it can be obtained from the pleasure-grounds along a walk of considerable length. The lines marked 6 are gravel-walks about 5 feet in width, and the remainder of the groundwork is turf, with the flower-beds set down on it. In planting this garden, Mr Cole made a most judicious and excellent use of foliaged plants, and the result was a charming piece of soft, inviting, decorative gardening. The four beds round the fountain, forming the segments of a circular line, were thus filled: In one of them *Coleus Verschaffeltii* formed the lines of a chain of diamonds, the diamonds being filled with Mrs Pollock. In the centre of each (and there were four of them) was a fine plant of the silvery-leaved *Centaurea candidissima*. The angles outside the diamond lines were filled with *Gnaphalium lanatum*—a most useful silvery-foliaged bedding plant when kept within due bounds—and edged with blue Lobelias. The opposite bed had Mrs Pollock forming the diamond lines, and the *Coleus* the central masses, with the *Centaurea* as before. The angles were filled with blue Lobelia, edged with *Echeveria secunda glauca*. The reverse of these segment beds had circles of *Coleus Verschaffeltii* resting in a groundwork of *Centaurea candidissima*. One of them had a Dalkeith chain of golden feather *Pyrethrum*, edged with blue Lobelia. In the other the relative positions of these two were reversed, as the *Pyrethrum* here became the outer edging. The mode of planting the four beds behind these has now to be stated. In shape they represent irregular triangles with the points scalloped out. One had an oval centre of *Centaurea gymnocarpa*; round this Grieve's Culford Rose Zonal Pelargonium, which was wanting in freedom of bloom; this was bounded by a diamond line of *Iresine Herbstii*, and next a diamond line of Golden-leaf Pelargonium, one of the very best of the golden-leaved section. The angles were filled in with blue Lobelia, and the whole edged with *Gnaphalium lanatum*. The next bed had a cross of *Coleus Verschaffeltii* in the centre; next this similar lines of Flower of Spring Variegated Pelargonium, with blue Lobelia filling up the angles. The reverse bed had a cross of *Iresine Herbstii*, with Golden-leaf Pelargonium instead of Flower of Spring, and still edged with blue Lobelia. The last of this quartette of beds was to some extent the reverse of that first described. *Centaurea gymnocarpa* formed diamonds in the middle, and round it were diamond lines of Golden-leaf Pelargonium; then similar lines of *Coleus Verschaffeltii*, and next this Mrs Pollock variegated Zonal Pelargonium similarly planted; and, as before, the angles filled in with blue Lobelia.

The two circular beds in the corners at the right of the plan were

nicely planted in the following manner : Each had two transverse lines in the form of an elongated letter S—in one instance the lines were formed of Christine Pelargonium resting on a circular mass of Gnaphalium; in the other case the lines were formed of Golden-leaf Pelargonium resting on a mass of blue Lobelia. The circular beds on the other side were planted similarly with these just noticed. Filling up the ground-plan can be seen four other beds, square in shape, but with the angles scalloped out. In the centre of one of these was a kind of wedge of Abutilon Thompsoni, round this a broad band of Christine Pelargonium, then another broad band of Golden-leaf Pelargonium, with the angles scalloped out to suit the shape of the bed; all margined with blue Lobelia. Another had a centre of four shields of Iresine Herbstii, very finely coloured and running between the blocks, filling up the spaces, and forming a line outside, there was Flower of Spring Pelargonium, the only variegated variety of this type grown here; next this a single line of Golden-leaf, edged with Heliotrope. Another of these beds had a central band of Lucius, which proves to be a grand bedding Pelargonium, of a fine and effective bright rose-coloured hue, and across this was thrown a diagonal line of Christine; the bed being filled up with clumps of Tagetes signata pumila on the east and west—and very fine and effective it was—and with Heliotrope on the north and south. On the north side, the fourth bed was the reverse of that opposite to it, except that Lucius took the place of Christine. In a line with the fountain, east and west, are two pieces of statuary, marked 10; and in continuation of this line come two circular beds, with a fine stone vase and pedestal in the centre filled with Pelargoniums and Petunias. Round this in each instance was a fine bold band of Geranium Canariense, a species likely to prove useful for subtropical work, but which had not yet bloomed; in one instance this was edged with the variegated Periwinkle, in the other with the golden-tipped Stone-crop, Sedum acre aureum.

It will thus be seen that flowering plants were sparingly used, while foliaged plants were much brought into requisition. About the whole there was a pleasant softness, and an entire absence of that glare that makes many a flower-garden so offensive to the eye. Under the standard Roses, east and west of the garden, dwarf Asters were in full bloom, and looked extremely pretty.

The flower-garden is not the only feature of interest at Ealing Park. There is a nice lot of forcing and plant houses, in every one of which the condition of the inmates proves Mr Cole to be in the front rank of his profession. As a Grape-grower he has shown his skill at first-class shows by taking leading prizes; as a cultivator of specimen plants he has been equally successful. Other features of interest are the

charming grounds, some fine ornamental trees, several coniferous plants planted by Mrs Lawrence, a fine avenue of *Cedrus Deodara*, &c., all of which tend to make the place at any time well worthy a visit.

R. D.



GARDEN RECORDS.

NO. XI.

MR CHARLES TURNER'S, THE ROYAL NURSERY, SLOUGH.

ALMOST every florist knows, or has heard of, the Royal Nursery, Slough. For years past—even long before Mr Turner became associated with it, it was a spot towards which florists turned their eyes and wended their steps; and forty years ago Dahlia cultivators looked as expectantly and as anxiously for the Dahlia catalogue of Messrs E. & C. Brown, the then proprietors, as the 'Times' newspaper has been at any time during the prevailing Franco-German war. Subsequently a Mr Cutter became the tenant of the Royal Nursery, and eventually Mr Turner, who had previously established himself in business at Chalvey, a small village lying midway between Slough and the classic halls of Eton. From the time that Mr Turner first became the lessee of the premises, and subsequently its proprietor, it has gone on increasing in extent, year by year adding to the rich floral treasures it contains, till it has now become one of the largest establishments of the kind in the United Kingdom.

The Royal Nursery, Slough, comes into our garden records mainly to afford us a means of recording our impressions of the new Dahlias of the present year, as well as those not so new to the floral world. The Dahlia has long been one of the leading flowers grown there, and the number cultivated for sale annually is something enormous. Notwithstanding the apparent decline of the Dahlia as an exhibition flower, there seems no lack of purchasers; and the Dahlia trade appears as brisk as ever.

For a few years past Mr Turner has given up the exhibition of Dahlias. During a long term he stood in the van of successful cultivators, and to the last was capable of holding his own against his most determined and talented opponents. At length he laid aside his arms, not because defeated, but to all appearance because satiated with victory; and retired from the field like a valiant warrior crowned with the trophies of conquest. He now arbitrates where he once pleaded, for having never lost the respect and confidence of Dahlia cultivators, his services are always in request as a judge. When the order of St Flora is established, and its honours dispensed, and the muster-roll of her worthy adherents called, one of her most gallant knights, for the sake of the victories his high talent and patient skill have won for him, will be Charles Turner of Slough.

Altogether, Mr Turner had this season planted out something like 700 Dahlias, and as there were three or more plants of each variety selected, a pretty accurate estimate could be formed of them. Not being required for exhibition purposes, but simply for comparison and stock, they were planted closer together than is usually the case when blooms are required for show. Of the new flowers sent out by Mr Turner in May last, Alice Gair (Turner), pure white, edged with purple like a Picotee, had not done well, owing to its being so hot and dry. A moist cool season suits it best,—then it is very pretty. Head Master (Turner), deep rose, had not done well; yet it must be a good flower, as on p. 473

of the October No. of the 'Gardener' it was commended by Mr Perry. Mrs Coleman (Turner) is another flower with a white ground, tipped with crimson, very pretty, but the dry weather had told against it also. Oxonian (Turner), a deep flower of a bluish-purple shade, is distinct in character, of fine petal and outline, and likely to prove very useful. Provost (Turner), shaded orange, is a flower suitable for exhibition or border purposes, having a capital upright habit, and being free blooming, makes a fine back-row flower. Sunshine (Turner), yellow, tinged with red on the points of the petals, pretty, good, and very constant; and Toison d'or (Turner), no doubt the finest yellow Dahlia in cultivation, of a deep pure golden hue, very fine and constant.

Of Mr Keynes's new flowers of the present year, the following were seen here, and they were estimated as under: Aristides (Rawlings), deep crimson, shaded with purple, perfect form and fine quality, but, as seen here, too small; Charles Backhouse (Goodwin), glowing scarlet, fine shape and hue of colour, also small; Gipsy King (Hopkins), a novel shade of mulberry, new in colour, and fine quality; Golden Eagle (Keynes), yellow, with a lacing of maroon, like a Picotee, petals a little pointed, but a good useful constant flower; James Grieve (Keynes), buff, deeply edged with crimson, late in blooming, large and coarse; Mrs Eckford (Keynes), blush, a large and bold flower, but rather inclined to coarseness; Netty Buckell (Keynes), blush, tinted with pink, large, and wanting refinement; Paul of Paisley (Keynes), lilac, fine form, high centre, full substance, promising to be very useful; Pretender (Keynes), lilac, nearly white at the base of the florets, flat, and a little coarse; Roundhead (Keynes), a peculiar shade of bronze, novel and distinct, large, fine shape and substance; Royalty (Rawlings), rich golden-yellow, with a dark centre, fine outline and petal, canes good early in the season—wants another season's growth to test its constancy; and Thomas Hobbs (Keynes), deep crimson, of good size and quality, and a constant and reliable show-flower.

Of older kinds the following were passed in review, and possibly the descriptive notes appended may be found of some service to our readers. Adonis (Fellowes), French white tipped with lilac rose, a lovely Dahlia; Albion (May), white, very useful as a back-row flower, though a little coarse; Andrew Dodds (Keynes), a good useful dark flower, of fine quality; Artemus Ward (Fellowes), blush, striped and edged with lilac rose, actually a fancy flower, though capable of being shown in both classes, a novel and pretty variety; Autocrat (Fellowes), rich maroon, shaded with purple, very fine; Bullion (Fellowes), deep yellow, a good useful flower; Buttercup (Fellowes), very fine shade of yellow, but comes thin; Champion (Thornycroft), crimson, a good-shaped flower, but uncertain in a dry season; Charles Turner (Keynes), yellow, tipped with crimson, very fine and useful; Charlotte Dorling (Turner), white ground, edged and tipped rosy-purple, very fine; Fair Imogene (Fellowes), white, delicately edged with lavender, very fine and constant; Hugh Miller (Salter), shaded orange, very useful, though old; Iona (Fellowes), buff, edged and tipped with lake, wants depth of substance; James Bennet (May), blush, veined and tipped with purple, very useful and good; John Downie (Keynes), yellow, tipped with red, a good early-flowering variety; John Dunnington (May), dull red, large, and very constant; John Kirby (May), a very good and constant buff-yellow flower; King of Primroses (Rawlings), primrose, very fine, of great depth of substance, and constant; Lady Gladys Herbert (Keynes), white, deeply edged with crimson, inclined to be coarse, but a very useful exhibition flower; Lady Jane Ellis (Eckford), cream ground, tipped with purplish-rose, very constant; Lord Derby (Pope), rosy crimson, a very useful show-flower, but inconstant this season; Lord Napier

(Keynes), both thin and inconstant ; Memorial (Eckford), pale rose, a most useful and beautifully-formed flower ; Mrs Boston (May), lilac, exquisite shape, and very constant ; Mrs Brunton (Eckford), pure white ground, heavily laced with deep purple, very fine indeed, and constant ; Mrs Dorling (Turner), in the way of Charlotte Dorling, and quite constant ; Paradise Williams (Keynes), clear claret, with a good deal of fire in it, very useful and constant ; Princess (Fellowes), pure white, good, constant, and early to bloom ; Queen of Beauties (Fellowes), pale straw, tipped with purple, very fine ; Valentine (Fellowes), white, with a well-defined edge of purple, fine outline, and very constant ; Vice-President (Keynes), bright-orange, a good, useful, and constant flower ; Yellow Boy (Keynes), pure deep yellow, somewhat uncertain, but comes very fine occasionally ; and Yellow Perfection (Turner), bright yellow, of fine shape, but apt to come quilled in the petals.

No new Fancy Dahlias were sent out by Mr Turner last spring. Mr Keynes sent out the following : Judy (Keynes), yellow, fully striped and spotted with maroon, good and useful ; Lord Dalkeith (Keynes), pale ground, edged with purple and crimson, wanting in quality ; Model (Eckford), pale buff, striped with maroon, fine petal, shape, and substance ; and Purple Flake (Keynes), pure white, deeply flaked with clear purple ; came somewhat thin this season. Among older Fancy flowers, the following notes will pretty fairly estimate their worth, as seen this season : Annie (Collier) crimson, tipped with white, useful and good ; Bessie Wyatt (Keynes), white, striped with red, fine and constant ; Butterfly (Keynes), pale ground, striped with scarlet and brown, very constant and good ; Chang (Keynes), yellow, striped and mottled with scarlet, very large and somewhat flat, but very useful ; Ebor (Godwin), chocolate, striped with dark maroon, fine form, and useful ; Fanny Sturt (Pope), red, tipped with white, very pretty, and a reliable show variety ; Formidable (Legge), red, tipped with white, pretty and good ; Frank Tiffin (Keynes), yellow, heavily striped with red, fine and constant ; Galatea Fellowes), white, striped with maroon, very pretty ; Glory (Legge), blush, striped with rosy-crimson, useful, and dwarf in growth ; Lady Dunmore (Turner), saffron, with bright crimson stripes, and tipped with white, very fine and constant ; Le Domine Noir (Turner), maroon, tipped with white, very pretty indeed when caught good ; Miss Annie (Eckford), yellow, tipped with white, the best of its class ; Negress (Fellowes), rosy purple, striped with maroon, and tipped with white, very pretty, but comes small ; Norah Creina (Green), orange, tipped with white, very fine and constant ; Pauline (Turner), buff, tipped with white, of extra fine form and quality ; Pluto (Turner), dark maroon, tipped with white, a fine and showy flower ; Polly Perkins (Turner), yellowish buff, tipped with white, fine quality, one of the best Fancies grown ; Prospero (Godwin), maroon, tipped with white, very pretty ; Punch (Keynes), light ground, striped with purple, pretty and good ; Queen Mab (Turner), white, with scarlet edges, very showy and fine ; and Top Sawyer (Keynes), white, striped and mottled with purple, very good.

There were many other features of interest to be seen in this Nursery which were noted down at the time, but our space forbids any further extension of this paper. In subsequent numbers we shall be able to allude to them.



NOTES ON HARDY HERBACEOUS PLANTS.

(Continued from page 446.)

CRASSULACEÆ.

THE hardy section of this tribe comprises few genera but many species. A good many of them were old familiar plants in gardens; but they have for many years been lost sight of, their quiet unobtrusive style being scarcely tolerated while the rage for colour was rampant. Recently, however, some species of *Sempervivum* with rigid geometric aspect, and *Sedums* with close carpet-like growth or glaucous leaves, and several *Echeverias*, along with other plants of succulent or peculiar foliage, have been used to produce novel and pretty results in flower-gardening. It is a step in the right direction, and will serve to relieve the present style of flower-gardening from the ban of obtrusive monotony that has been laid on it for some time. Very few, if any, of the hardy *Crassulaceæ* are distinguished by brilliant colours or showy qualities of any kind; their peculiar recommendations are rather that they abound in soft tints of flower and foliage, and great variety of form and aspect—they are, in fact, generally humble quiet objects, but attractive and pleasing in a high degree. For the most part they are mountain rock-plants, generally affecting dry habitats where little else will grow but themselves; they are therefore naturally well adapted for ornamenting dry rockwork, for planting in thin gravelly soil, on dry exposed banks, and for draping stumps and stones and old walls or ruins with a varied mantle of interesting vegetation. Many of them are excellent border-plants; and, as already alluded to above, some are likely to become popular for many uses in the flower-gardens in bedding out. They are plants of the easiest culture, flourishing abundantly in almost any soil but those that are excessively wet; but special requirements of species for peculiar purposes will be noticed afterwards in the proper place. All may be propagated by division—that method is unmistakably suggested to even the casual observer by the *Sempervivums* generally, which divide themselves, more or less freely, annually; but in nearly every case propagation in this tribe is the most simple matter, whether by division or cuttings.

Cotyledon umbilicus, syn. *Umbilicus pendulinus*—Wall. *Navelwort*.—The genus *Cotyledon* is a small one, comprising plants of no striking ornamental qualities; but they are useful for planting on old walls with a view to covering them, and are easily established in such positions if inserted in crevices where a little soil or decayed lime or stone exists—anything, in short, that will serve to retain them in their place, along with a little moisture, which is all they appear to want in the shape of nutriment. The species selected grows about 6 or 9 inches

high. The leaves are thick, fleshy, and round, with a few remote teeth, and attached by their centres to the longish stalks. The flowers are greenish yellow in long racemes, and are produced throughout the summer. Native of Britain and Ireland, and many parts of western Europe.

Sedum.—This is the most numerous genus in the hardy section of the tribe. There is a large number of the species in cultivation, but they are chiefly confined to botanic gardens, and only a few of the more common are to be found generally in private ones throughout the country. Some are pretty border plants, others are suitable for rock-gardens, and generally for furnishing dry gravelly places with vegetation, and draping stumps, old walls, and ruins. Hardy species only are selected, but there are some tender ones, with peculiar and variegated leaves, that are valuable ornaments of the flower-garden; and some of the hardy ones are not inferior to these for the same purpose, and are becoming popular.

S. acre—*Common Stonecrop*.—This is a well-known British plant, abundant in many parts of the country on rocks and dry banks and walls. It forms close masses of weak trailing stems, thickly crowded with bright-green, thick, short, almost globular, leaves. The flower-stems are nearly erect, about 2 inches high; flowers bright yellow in small crowded cymes. This is an invaluable species for clothing old walls, stones, and dry sandy banks. There is a very pretty variegated form, which in spring assumes the appearance of a carpet of gold when planted in breadth; the tips of the shoots become bright golden yellow as soon as growth begins in spring. It is therefore a valuable plant for spring massing in dry light soil, but does not succeed so well in richer and wetter soils; it is quite easy, however, on a small scale, to provide a dry enough position for it under any circumstances, and the plant is well worth an effort. Both the species and variety are capital plants for suburban gardens; and although the species manages to make a tolerable existence on the face of a dry rock, it does not object to richer pabulum, and luxuriates in any soil not absolutely boggy. The variety is found in nurseries under the names *S. a. variegatum* and *S. a. aureum*.

S. album—*White Stonecrop*.—An elegant species, with numerous barren stems matting and creeping on the surface of the ground. The leaves are crowded, fleshy, and cylindrical. The flower-stems are erect, about 6 inches high, bearing pretty corymbs of pure white flowers, in some individuals also pink; they appear in June and July. Native of dry banks, rocks, and walls in Britain and Europe generally. Suitable alike for rockwork and beds and borders in light dry soil, and for clothing gravelly stony banks.

S. albo-roseum—*White-and-rose Stonecrop*.—This plant grows about 18 inches high, with leafy upright stems. The leaves are broad oblong, widening upwards. Flowers in large terminal corymbs, white and rose, appearing in summer. Native of Japan. An excellent ornament of the mixed border, flourishing in ordinary garden soil.

S. Anacampteros—*Evergreen Stonecrop*.—A very distinct species, with numerous decumbent or creeping stems; the barren ones are crowded with wedge-shaped glaucous leaves in conical rosettes. Flower-stems nearly erect, somewhat leafy, and terminating in a dense corymb of purplish flowers in July and August. Height about 6 inches. Native of the Alps and Pyrenees.

S. dasyphyllum—*Thick-leaved Stonecrop*.—This is a very attractive little plant, only an inch or two high. The stems are prostrate and weak, clothed with numerous thick, fleshy, almost globular, leaves, deeply glaucous. The flowers are dull white, often pink or tinged with pink. A very pretty rockwork plant, but quite unsuitable for the border or flat surfaces unless very dry. Native of the south of England, but rare—and widely spread in Europe, but not abundant.

S. Ewersii—*Ewers's Stonecrop*.—A very dwarf species 2 or 3 inches high, with flat, succulent, toothed, deeply-glaucous leaves. The flowers are purplish rose, in pretty terminal corymbs, appearing in July and August. This is one of the most choice and handsome of the dwarf Sedums, and is a beautiful ornament of rockwork or border, but in the latter must be provided with a dry warm soil. Native of the Altai Mountains.

S. Fabaria—*Large purple Japan Stonecrop*.—The plant grows erect, with stout stems 1 foot or 18 inches high, furnished with broad oval leaves, glaucous and toothed, and standing horizontally on the stems. The flowers are rosy purple, in dense broad corymbs, appearing in September and October. Native of Japan. This is perhaps the handsomest of the tall-growing species. It is worthy of a place in the choicest collection of hardy plants, being very distinctive and beautiful. It is useful for flower-gardening on the bedding method, either in the way of breaking the uniformity of large flat surfaces or for centres to small beds; and where the style is formal and severe its rigid aspect will be found to harmonise well with the surroundings. For this purpose the plant is best divided annually into single crowns in early spring, and assisted with a little heat for a time. It is perfectly hardy, but flowers rather too late to be of much use in cold late districts in Scotland as a flowering plant; but its habit and glaucous hue are valuable and desirable for their own sakes.

S. Kamtschaticum—*Kamtschatka Stonecrop*.—This species has numerous prostrate barren stems clothed with opposite, roundish, regularly-

toothed, dark-green flat leaves. The flowering stems ascend a little, terminating in a corymb of deep-yellow flowers, which appear in July and August. Native of Kamtschatka. A very good border species, and handsome also on rockwork. Height, 6 to 9 inches.

S. oppositifolium—*Opposite-leaved Stonecrop*.—This species grows only a few inches high. Like the last, it has prostrate barren shoots clothed with opposite wedge-shaped leaves, flat and toothed. The flowers are in corymbs, are dull white, and appear in summer and autumn. Native of the Caucasus. A useful border species.

S. populifolium—*Poplar-leaved Stonecrop*.—This is one of the most distinct, though not the most beautiful, of the group. It assumes rather a shrubby habit, about 1 foot high. The leaves are flat, heart-shaped, toothed, and supported on stalks that are lengthy for a *Sedum*. The flowers are in terminal corymbs, and dull white, with purplish carpels and pistils. Flowers in July and August. Native of Siberia.

S. Rhodiola, *syn. Rhodiola rosea*—*Rose-root Stonecrop*.—This is a well-known old-fashioned border plant, common in many cottage-gardens in the country. It is not highly ornamental, but has a good deal of distinctiveness about it. The stems are leafy, stout, and erect, about a foot high. The leaves are oblong, toothed, and slightly glaucous. The flowers are in terminal close corymbs, and each flower contains only one sex, either male or female; and in colour they are in different individuals either yellow or purplish, the former in nature being the most prevalent. Native of the mountains of Britain, and the mountainous countries of Europe and Asia.

S. rupestre—*Rock Stonecrop*.—This is a dwarf creeping species, forming lowly masses of barren stems, and branches clothed with awl-shaped cylindrical leaves, more or less glaucous in hue. The flowers are in terminal cymes, composed of several recurved branches, and bright yellow, appearing in July and August. Native of Britain and various countries of Europe. Two slightly-differing varieties are circulated in gardens as species under the names *reflexum* and *Forsterianum*, but they are not desirable in any good collection together.

S. sempervivoides—*Houseleek-like Stonecrop*.—This species differs from all the preceding. The leaves are thick and succulent, egg-shaped, with an abrupt sharp point, and somewhat hairy above and below, and arranged in close compressed rosettes. The flowers, in terminal corymbs on erect stems, are dark purple, appearing in July and August. Height from 9 inches to 1 foot. Native of Iberia.

S. sexangulare—*Six-angled Stonecrop*.—This is near in aspect to *S. acre*, but is quite distinct. It has the same close mat-like growth, but the leaves are longer, narrower, and darker green. The flowers are bright yellow, in the manner of those of *acre*, but begin to open as

the latter become exhausted, and continue for a couple of months. Native of Britain, but rare, and of other countries of Europe.

S. Sieboldii—*Siebold's Stonecrop*.—A very distinct and handsome plant. The stems are slender, erect at first—in established plants afterwards arching outwards. Leaves in opposite pairs or threes, roundish, flat, and glaucous, as are the stems and all parts outside the corolla. Flowers pink or rose in handsome corymbs. Native of Japan. Quite hardy, but in cold wet localities in Scotland flowering too late to be of any use, as the flowers are cut up with frost or cold and wet combined. It is a very useful early winter greenhouse plant, when well cultivated in pots. There is a very handsome variegated form.

S. spurium—*Fringed Stonecrop*.—This is a prostrate species, with numerous barren shoots matted on the surface of the ground. The leaves are numerous, flat, roundish, or wedge-shaped, and toothed, having a fringe of minute sharp semi-transparent hairs on the margin. Flower-stems decumbent at the base, ascending only an inch or two, bearing heavy corymbs of bright rose-coloured flowers. Flowers from July till October. Native of the Caucasus. This is one of the best of the dwarf border species, and beautiful also on rockwork.

S. Telephium, *syn. S. purpureum*—*Orpine Stonecrop*.—This species grows erect, with hard unbranched stems, to the height of about 18 inches. The leaves are oblong and coarsely toothed, scattered irregularly on the stems—sometimes distant, but often nearly opposite, in pairs or threes. The flowers are in handsome pyramidal dense corymbs, and purple; they appear in August and September. Native of Britain and northern and central Europe. It is a useful border plant, and may be used to adorn semi-wild places, either in moderate shade or bright sunshine, if the natural vegetation is not too tall. One of its popular names—*Livelong*—is suggestive of its tenacity of life, and it possesses that quality in a high degree; in fact, if turned out roots uppermost, it will rear its head in spite of the rude inversion, and proceed to establish itself without delay on a new basis.

(To be continued.)



NEW PLANTS OF THE PAST TWO MONTHS.

THE magnificent new *Dendrobium chrysotis* exhibited by Messrs J. Brooks & Co., Fairfield Nursery, Manchester, before the meeting of the Royal Horticultural Society on the 21st of September, and awarded a first-class certificate, is a very fine and extremely showy species. It is supposed to have been imported from Assam a few years ago, and this particular plant was purchased at one of Stevens's sales. The

flower-spikes contain about six large deep-yellow flowers, which measure about $2\frac{1}{2}$ inches across, and are produced on stems some 3 to 4 feet in length. It is placed by Professor Reichenbach as near *D. fimbriatum*, and has a lip fringed something in the same way. At a later meeting Mr Denning, gardener to Lord Londesborough, sent a fine specimen of this species, which received a special certificate.

New Palms have received fine additions in *Calamus cinnamomea*, shown also as *Dæmonorops cinnamomea*; *Livistonia altissima* and *L. rotundifolia*, two very elegant species; and also in *Corypha Martiana*: and new Ferns in *Adiantum Peruvianum*, a new and extremely effective species; in *Athyrium Filix-Fœmina Blakeii*, a very handsome crested plumose form, raised by Mr Parsons of Danesbury; *Platycerium alicorne majus*; *Adiantum capillus Veneris maximum*; *Polystichum angulare congestum*; *Scolopendrium vulgare Iveryanum*, and *S. vulgare lacerato-cristatum*, the two latter being dense, crispy, ornamental forms, well adapted for general decoration.

Wigandia imperialis, a noble foliaged plant for subtropical work, in the way of *W. caracasana*, but distinct from it, was exhibited by Messrs E. G. Henderson & Son, and awarded a first-class certificate. The same award was made to Messrs Veitch & Sons for *Daphne elegantissima*, a variegated form of *D. indica*, the leaves broadly margined with yellow; to Messrs J. & C. Lee for *Thuja semper-aurea*, a welcome addition to the class of hardy ornamental plants; to George F. Wilson, Esq., F.R.S., for *Lilium Leichtlinii*, the flowers yellow, deeply spotted with dark, and the petals much recurved; to Messrs Ivery & Son for a white woolly-leaved *Cineraria*, named *asplenifolia*, likely to prove useful as a hardy silvery-foliaged bedding-plant; to Messrs Blackhouse & Son, York, for *Senecio argenteus*, with handsomely-cut frosted foliage, and compact in growth; to Messrs E. G. Henderson & Son for *Thymus citriodorus aurea*, a golden-leaved form of the common Lemon Thyme, that will be very useful for bedding purposes, and thoroughly hardy; and for *Alternanthera magnifica*, a vigorous-growing form of *A. paronychioides*, and nicely coloured; and to Mr Green, gardener to W. Wilson Saunders, Esq., for *Agave Besseriana candida*, a handsome compact-growing species. In addition, Mr Green has exhibited male and female specimens of *Stangeria paradoxa*, the latter bearing ripe fruit, produced for the first time in this country, the two plants being rarely got in flower at the same time; *Griffinia dryades*, a new Brazilian species, with flowers of a bright cerulean blue, with white passing down the middle to the base of the segments; a good flowering specimen of the handsome pale mauve-coloured *Gloxinia insignis*, that well deserves a much more extended cultivation; and a splendid example of *Miltonia Morelliana*, with very

large and finely-coloured flowers of unusual dimensions. *Pleroma macrantha florabunda*, now being distributed by Messrs E. G. Henderson & Son, has been exhibited by them, bearing large-cupped violet-coloured flowers, of great size, and freely produced.

Several new Dahlias have been exhibited and received certificates but these shall be noticed in our next number. A first-class certificate was awarded to Messrs J. & C. Lee for gold and bronze (bicolor) *Pelargonium* Mrs John Lee, the leaves finely coloured and marked and the habit good in every respect; also to Messrs E. G. Henderson & Son for variegated zonal (tricolor) *Pelargonium* Miss Goring, golden-edged variety, finely coloured, and of vigorous growth; to Mr Douglas, Loxford Hall Gardens, for *Gladiolus* John Standish, a beautiful flesh-coloured variety, suffused with pale crimson, and pencilled with purple; to Mr Parker, Victoria Nursery, Rugby, for ivy-leaved *Pelargonium* Golden Queen, the leaves edged with, and some wholly, yellow—habit vigorous: and a second-class certificate was awarded to Messrs Backhouse & Son, York, for *Aster longifolius*, with bright rosy lilac flowers, having a conspicuous yellow eye, and forming a compact bushy growth, about 2 feet in height. R. D.



INDOOR GARDENING.

JUST now, when the shadows of the on-coming autumn and winter are thrown across the closing days of the rapidly-retreating summer, and indications multiply that

“The summer is past,
And the winds have a rumour that prophesies death”

to much that is now blooming and gay in the garden—just now is the time to consider how much of the floral beauty can in any way be preserved through the dark months to those who would gladly transfer to the interior of the house what cannot much longer be preserved to them without. To such as possess a greenhouse, this is a matter of small moment; to those without these important additions to the garden, the question becomes one of greater significance. To such ones indoor gardening comes as a pleasant and profitable pastime; and there are many ways, some of them simple enough, which can be utilised as a means of continuing on something like a vibration of the pleasurable emotion afforded by the summer garden when at its zenith.

One favourite and much-employed feature of indoor gardening is the cultivation of Hyacinths in glasses. This is now so well understood that no especial mention is necessary. It is time the Hyacinths were in

water, and that should just touch the base of the bulb. A few pieces of charcoal should be placed in each glass to keep the water from



FIG. 1.

becoming offensive—besides, it prevents the necessity for having it frequently changed. Our illustration, fig. 1, shows not only what hand-



FIG. 2.

some types of glasses are obtainable nowadays, but also shows their adaptation to hold cut flowers in winter, for they are at all times handsome ornaments on the chimney-piece. Fig. 2 shows what a charming aspect is presented by these glasses when the Hyacinths are in flower; also the duty of the support, and the way it should be fixed in the glass. it will also be seen what a finish is given to the glasses by the addition of a little green moss placed round the bulbs.

Fig. 3 shows a rustic robin drawing-room jardinet, filled with bulbs. The bulbs are placed either in soil, damp moss, or cocoa-

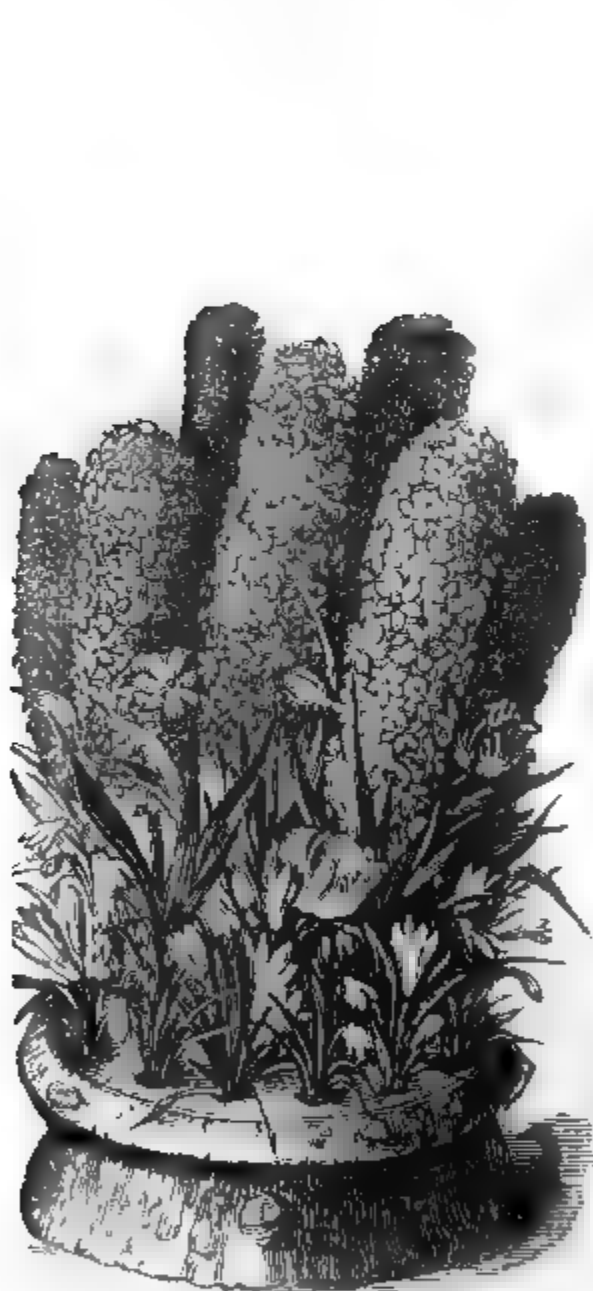


FIG. 3.



FIG. 4.

nut fibre. A layer of charcoal should be placed at the bottom as drainage, for the jardinet having no holes at the bottom, the water will sink to the bottom of the vessel. Notwithstanding this apparent drawback, bulbs do very well indeed in the jardinet if only some

attention be given them. Whatever the soil used, it should contain a good quantity of powdered charcoal or suchlike, to keep it from running together and becoming sodden. Hyacinths can occupy the centre of it, with Narcissi, Tulips, Crocuses, Snowdrops, &c., round them. A more elaborate contrivance is the Prince of Wales circular terraced drawing-room jardinet, fig. 4, which has three terraces rising one above the other; and when tastefully planted, this is a charming object to place in a sitting-room window. During the summer months, this and the preceding can be filled with Ferns. When planted with some of the most elegant species suited for the purpose, it would be equally attractive. Fig. 5 is a rustic hanging-basket, which can be suspended near a window, and can be used for the growth of bulbs during winter, and for plants in summer. There are many elegant and tasteful designs to be had, and they are charming ornaments for a sitting-room. Fig. 6 is a very tasteful design, as well as an ornamental and useful piece of furniture. It is termed the drawing-room octagon jardinet, and is manufactured in bronze, or in rustic wood fitted with encaustic tiles. In our illustration this is filled with a handsome *Dracæna*, with a low-growing Fern planted round it.

Such are a few of many means by which gardening can be carried on within-doors. They are by no means the most elaborate, but they represent some of the more easily managed modes. This, then, is the time to prepare and preserve within-doors some approximate resemblance to what is so fast passing away without; and some of these elegant contrivances, filled with suitable occupants, and carefully tended because affectionately regarded for the useful floral service they render, will be found among the best means of perpetuating during the desolation of winter something of that high satis-



FIG. 5.

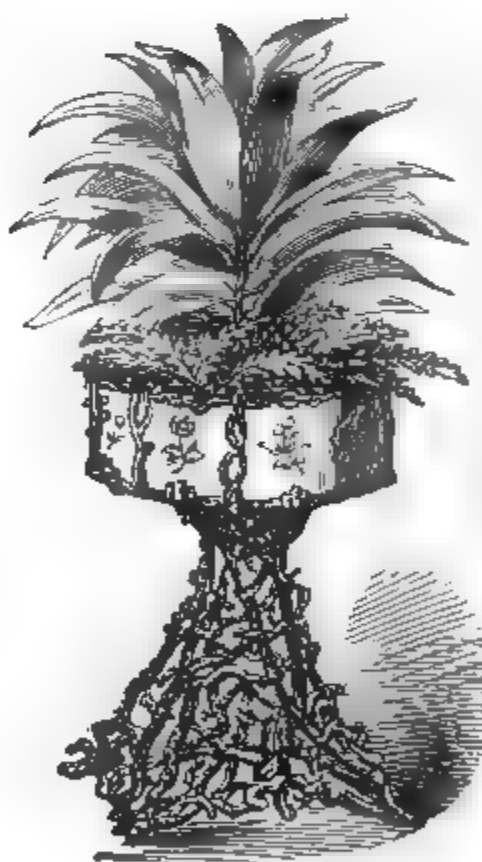


FIG. 6.

faction so many find in the culture of plants and flowers. We are indebted to Messrs Barr & Sugden, Covent Garden, for the opportunity of figuring these excellent contrivances.



GARDEN - WALKS.

FOR real comfort no garden is complete without good walks; but what constitutes a good walk is not so well understood. Well, then, a good walk should be firm, smooth, dry, and of an agreeable colour. To make a dry walk many people go to a vast amount of trouble, especially in draining, making foundations, &c. This is all time and material thrown away, for if we only look to the asphalt we find that a very small quantity of material, properly applied, will make a firm and smooth pathway. Of course the general drainage is indispensable; but if that be usually dry there is no further need, as is practised by some, for a drain under each walk. The fact is, the whole secret of a perfectly dry walk is not a dry foundation, but it is an impervious surface, which will enable you to get rid of the water at the sides, and without it percolating into the walk at all. Hence all walks and roads should be waterproof, and when they are so, a comparatively small portion of material only will be necessary to form them. Nothing is more common in going into a garden in course of formation than to find the walks excavated to the depth of 1 foot at the least, with a drain at the bottom. This will be filled with stone, broken to various sizes, and finally be surfaced with a 3 or 4 inch layer of finely-sifted gravel. If all this material has to be purchased, broken, and put in its place, the cost per yard is something considerable; and at the last you have not a dry walk nor a firm one, for the rain sinks into it, and when the frost breaks the surface, gravel is just so much mud. To remedy this we have for many years past abandoned that system of walk-making altogether; and now we can not only produce a good path, but a cheap one at the same time. Given the plot upon which you intend to form the walk or walks; first put in your levels, that each shall fall gradually to a given point, and then, placing your line, dig the ground over one spade deep, level it perfectly from end to end, and make it as firm as possible, not only by treading it with the feet, but also by ramming it with a cast-iron rammer. When the first edging is done and made as smooth and level as a billiard-table, take a straight-edge, and with a plumb-bob or spirit-level, level across to the other side of the walk, and then proceed to make it up in the same manner. The lining out of the walks, especially if they are curved, is a matter of great nicety, and one upon which the beauty of a walk in a great measure depends. Hence the curves must be perfectly easy and regular, and the two sides of a walk must correspond to the greatest nicety. This accomplished, proceed to lay down the verge or edging; and, be it turf, or box, or tile, the same nicety must be observed in making the two sides uniform and perfectly level. The excavation need not be more than 4 inches deep, rounding up, if the walk is 6 feet wide, 1 inch from the sides to the centre. Make the bottom quite firm and even, and then it will be ready to receive the material of the walk. The best is stone broken to the size of a walnut; but when that is expensive or difficult to procure, clinkers from the furnace, brickbats, cinders, or any hard material may be substituted, or all may be mixed together. Of course it is important that the material be broken to a regular size, and that it be free from soft dirt. Sufficient rough material being provided, select a firm

piece of ground, and divide into heaps of six barrow-loads, and in the centre of each leave a hole to receive a barrow-load of fresh lime. The lime should be of the best hydraulic quality, and should be fresh from the kiln. All being in readiness, cover the lime over with the rough material, and then pour six to ten gallons of water upon it. This will cause it to slake into fine powder, and then with more water it may be mixed like mortar into concrete, and immediately be laid down and levelled regularly, $3\frac{1}{2}$ inches thick—retaining the necessary rise from the sides to the centre. Smooth the surface with the back of a spade and make it perfectly level. In three or four hours, according to the “quickness” of the lime, the concrete will be getting firm, and then the fine gravel must be put on $\frac{1}{2}$ inch in thickness, be trodden firm, made quite level, and then rolled, and the edges of the walk, or anywhere where the roller cannot get, must be rammed quite firm. After the first soaking rain, when the surface-gravel is washed clean, follow again with the heavy roller and rammer, and you will have a walk as firm as a pavement, perfectly impervious to moisture, and not to be injured by either rain or frost. Of course provision must be made to carry the surface-water away; but if the subsoil be light, then we have found an inch crowbar driven into the side of the walk to a yard in depth where the water accumulates sufficient to secure a quick riddance of the water, and perfect dryness. Walks made in this manner twenty years ago are as firm, dry, and smooth as the day they were put down, and will remain so for many years to come. Recently we have made several thousand yards of walks with nothing but cinder, concrete, and a facing of gravel, and these came very cheap. One specialty in these walks must be observed, and that is, to take care that there be no lumps of lime in the concrete, as a piece the size of a walnut, on becoming slaked, would make a sad patch in the walk, which could only be mended by taking the patch out bodily and replacing it with fresh concrete, not an easy matter to do without its showing. Walks of this kind rarely become troubled with weeds or greenness, and if they do, a sprinkling with sulphate of copper (blue vitriol), in the proportion of 1 lb. to six gallons of water, will destroy every vestige of vegetation, and improve the appearance of the walk at the same time. After saying this much, it is scarcely necessary to add that vitriol will destroy vegetation of all kinds, and therefore be careful not to allow it to extend to or beyond the verges of the walks.—*Field*.



HORTICULTURAL EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY, SOUTH KENSINGTON, October 5.—At the periodical meetings of this Society prizes are offered for a few things, and though the amounts of these are not very large, they generally occasion a smart competition. On this occasion the fungologists had an exhibition, prizes being offered for collections of edible Fungi, as well as for collections of edible and poisonous Fungi, separately arranged.

The Fruit Committee had to award prizes for the best dish of Grapes, consisting of six bunches of any variety, grown in the open air against the walls, without any protection whatever. A large number of Grapes were staged: the first prize was awarded to Mr Hepper of Acton, with Royal Muscadine; and the second prize to Mr Norris of Broadclyst, with the same variety. There were good examples of Black Hamburg, West's St Peter's, Bidwell's Seedling, Esperione, Black-cluster, &c., and, in awarding the prizes, the judges appeared to give too much importance to flavour, and nothing to cultivation. The best collection of black

Grapes came from Mr Bannerman, Blithfield Gardens, Rugeley, and consisted of Barbarossa, Lady Downes, Alicante, and Blithfield Seedling, a Black Hamburg type in the way of Mill Hill Hamburg—these being the best; also Gros Guillaume, Mrs Pince's Muscat, Black Prince, and West's St Peter's. Messrs Lane & Son, Berkhamstead, was second; their collection contained some nice berries of Muscat Hamburg and Frankenthal. Two somewhat indifferent collections of white Grapes were staged by Messrs Lane & Son, and Douglas, Loxford Hall Gardens, and equal second prizes were awarded them, the first prize being withheld. Mr Douglas had a small bunch of Golden Champion, with some nice berries on it, and a very good bunch of Buckland Sweetwater. In the class for a single dish of black Grapes, Black Alicante took the first and second prizes; a glorious bunch came from Mr Mattram. The best single bunch of white Grapes was Muscat of Alexandria, from Mr C. Turner, a truly regal bunch, large, handsome, fine berries, and beautifully coloured.

Mr Barron of the Chiswick Gardens exhibited a fine bunch of the Madresfield Court Black Grape, in grand condition, and its excellent development and flavour was rewarded with the high approbation of the Committee. This appears to be in every respect the best new Grape of modern introduction; and Messrs J. & C. Lee deserve praise for their unfaltering faith in the high qualities of this variety. A green-skinned Fig, named Monaco blanco, having a deep-red flesh, and of most excellent flavour, was also sent from Chiswick.



BOOKS RECEIVED.

THE GARDENER'S MAGAZINE for October.

THE FOOD JOURNAL for October. The continuation of the papers on "Tea" in this number furnishes some interesting and even startling information as to the adulteration of this favourite article of food. Tea is both adulterated by the foreign makers and by the importers or dealers in this country. The last is of far less importance than in the first case. From this paper we learn that—"The adulterations practised before import are varied and disgusting. They consist in 'facing' common tea with deleterious substances, in drying up foreign leaves (chiefly those of the willow) along with tea, and in re-drying leaves which have already passed through the pots of the celestials, and which are doubtless considered quite good enough for us barbarians. A great trade has lately sprung up in this branch of industry, and the result is known as 'Maloo mixture.' It seems that the leaves are industriously collected and spread out to dry in the sun, when they again become shrivelled, and besides being thus, after a little facing, rendered saleable, they form a most excellent resting-place for the pigs and other domestic animals attached to the cottage where the manufacturer resides." A coloured illustration is given as a pictorial delineation of this wonderful mixture, which was taken by the artist from a saucer, in which had been spread the various constituents as picked out from the several samples. These included rice husks and straw, rice blackened with plumbago, silk-worms' droppings, maggots, iron-filings, fragments of limestone, minute seeds, scorched tea buds and husks, and fragments of willow leaves and stalks. Truly this "Maloo mixture" is one of a not very inviting character.

TRANSACTIONS OF THE SCOTTISH ARBORICULTURAL SOCIETY, giving the proceedings of the Sixteenth Annual General Meeting held in November 1869, with the various papers read on that occasion.

NOTES AND QUERIES.

CAPSICUMS (H. P.)—Certainly Capsicums can be included in a collection of ten varieties of vegetables, and on no account should a collection be disqualified in consequence. The Capsicum is only useful as a vegetable, and of no practical use as a fruit.

NAME OF PEAR (A Reader).—Fondante d'Automne, a medium-sized, delicious, melting Pear, having a rich buttery flavour. It should certainly form one of a select collection.

PEACHES (UNDER-GARDENER).—They were both raised from seed by Mr Thomas Rivers, of Sawbridgeworth, and are thus described by him :—"Lord Palmerston—Very large, the largest of Peaches ; skin creamy white, with a pink cheek ; flesh firm, yet melting, very juicy and rich. It was raised from the Princess of Wales Peach, and resembles in its size and beauty its grandparent the monstrous Pavie of Pomponne ; flowers very large and beautiful ; glands nearly round : season, from middle to end of September. It clings slightly to the stone unless fully ripe. Princess of Wales—Very large, one of the largest Peaches known, and one of the most beautiful, its colour cream, with a rosy cheek ; melting, rich, and excellent ; ripens just before Dese Tardive, and is very valuable ; flowers very large and beautiful ; glands round." When at Lord Eversley's charming place at Heckfield, near Reading, some weeks ago, we saw both these fine Peaches. The former was growing in an early Peach-house, and we were informed by Mr Wildsmith, the gardener at Heckfield, that he had gathered a large crop of magnificent fruits, some of them of great size, yet combined with the finest quality. Princess of Wales was growing on a south wall in the kitchen-garden, and bearing a large crop : this was of a fine appearance, and truly "melting, rich, and excellent."

WINTERING VERBENAS (Verbena).—Your query has been submitted to Mr Henry Eckford, of Coleshill Gardens, the raiser of some of the finest Verbenas now in cultivation, and the following is his reply :—"In reply to your correspondent, Verbena, I have to say Verbenas may be kept in a cold frame ; in fact some amateur cultivators in this neighbourhood keep them under common hand-lights—of course for want of better accommodation—and sometimes are tolerably fortunate. Although they dislike much dry heat, yet to keep them successfully they require a house or pit where a little heat can be applied in case of long-continued dull cold weather."

DAHLIA EXPERIENCES.—I must express my thanks to Mr Perry for his great kindness, and the valuable information contained in his letter, which I shall have much pleasure in availing myself of. I trust you will excuse my opening up the subject again, but as there appears to be a doubt about some of the sorts mentioned by Mr Perry, I think it advisable to ventilate it. I presume that Head Master, Flag of Truce, and Thomas Hobbs are new Dahlias of the present year, as I cannot find them in last year's catalogues. [Head Master (Turner) and Thomas Hobbs (Keynes) are new of the present year, Flag of Truce (Wheeler) was sent out in 1868.] Is Thomas Hobbs a misprint for "The Nobbs," which is highly spoken of? [No. The latter is evidently a misprint for the former.] Gipsy Queen and Oxonian must also be new, or is the former identical with Gipsy King? [Gipsy Queen is an error. It is Gipsy King, and was raised by Mr Hopkins, of Brentford, and sent out by Mr Keynes last spring. Oxonian (Turner) was sent out by the raiser at the same time.]

With regard to the flowers named in No. 2 list, I will act upon Mr Perry's advice, with one exception—viz., Chairman—which I cannot grow to any purpose. I am quite aware it is a first-class kind, but I have tried it so often, obtained from various places, and with the same result—i.e., the first bloom or two good, and all the rest "seedy." I am happy to state that last year (having seen it advocated in the 'Gardener') I, for the first time, trenched and ridged my ground as recommended by Mr Perry, and the result exceeded my most sanguine expectations, as the plants produced larger and better blooms than ever they did before, and there is no fear of my neglecting this operation during the coming winter. In conclusion, I trust other Dahlia-growers will give the benefit of their experience also.—A FOUR YEARS' SUBSCRIBER.

SEEDLING DELPHINIUM (T. S. W.)—Your seedling from *D. formosum* is a lovely flower, being of an intense bright blue, with a pale dull red-lilac spot on each segment, the double lip and crest in the centre being pure white. It is also quite as large as the parent. Some of the pale-blue flowers sent are very pretty, and well worthy another season's culture.

PÆONIES (G. M.)—Pæonies grow best in a light sandy loam, and need but little attention—digging round and manuring in the winter, and some care in tying them up neatly in the spring, being all they require. They soon increase, but it is injurious to divide the roots too often, as the constitution of the plant is by this means weakened, and they generally take some time to recover their usual vigour; nor should they be dug up and removed frequently, as this is apt to check their growth for a season at least.

PREPARATION OF THE GROUND FOR ROSES (Rosarian).—The following directions are given by Mr Keynes, and they will no doubt prove of service to you:—"When they are to be placed out singly on lawns, a hole should be made 2 feet deep, and large enough to contain a good wheel-barrowful of compost, two-thirds of which should be strong turfy loam from an old pasture, and one-third well-decomposed animal manure. When beds are to be planted, the ground should be thoroughly trenched 18 to 24 inches deep, as the nature of the soil may admit, intermixing some of the above compost. If this be done well the beds will last several years, with adding a dressing of manure yearly; it is difficult to give the Rose too rich a soil.

"If a piece of ground is set apart for the exclusive cultivation of Roses, the most open situation should be selected; if wet, it should be drained well: this done, the ground should be trenched the depth as recommended above; the beds may then be formed according to taste and circumstances. November is the best month for transplanting. It is not advisable to prune at the time of planting. If planted in November, about the first week in March for Hybrid Perpetuals, and the last week in April for Tea Roses, would be the best time to prune.

"In pruning, if they grow vigorous and thick, some shoots should be cut out entirely and others left long, varying from 6 to 18 inches, in proportion to their growth; the moderate growers should be pruned back close, say from two to three buds to 6 inches."

MANURE FOR HOPS.—Land and water are laid under contribution to supply manure to the Hop-garden. To obtain manure from the nearest towns, teams are daily upon the road; the railway brings rags from all parts, clothiers and fell-mongers' waste from the west of England and Yorkshire, clippings and scrapings of hides from the tan-yards of Bermondsey. At the same time, artificial manures

are introduced to increase the productiveness of other parts of the farm by application to the particular crops they suit, which produces more food for cattle, and in the end, farmyard manure for the Hops. The number of pigs and cattle is increased to the utmost limit by the addition also of artificial food. The grasslands are enriched with every known and purchasable application to produce more hay, to feed more stock, to make more dung for the ground under Hops. Some of these fertilisers are not applicable to Hops direct, and must produce their effect in a roundabout way. Every part of the farm is made subservient by those growers who go in thoroughly for this special cultivation. The sea contributes sprats and herrings, starfish, whale's blubber, and all fish-refuse; while barges bring sweepings from Billingsgate, as well as other suitable manure from London. The cesspools in use before the introduction of water-closets, afforded a large supply to the Hop-garden. Nasal evidence is forcibly summoned to attest the strength of the above applications. Stench is a valuable property of manurial substances, as it constantly reminds the cultivator that they should be buried for his own benefit, not carried off by the air to be absorbed by all hungry lands, *pro bono publico*.—*Land and Water*.

LILIUM GIGANTEUM (G. R. D.)—From inquiries made, we believe *L. Giganteum* to be hardy. When visiting the Sunningdale Nursery of Mr Charles Noble, at Bagshot, a few days ago, we saw there lines of this Lily growing between rows of coniferous plants. Here, in an ordinary season, the strongest plants make a growth of from 7 to 8 feet, and bloom freely, and the fragrance from the flowers is diffused to an extent of from 60 to 80 yards round. Owing to the prevailing drought of the past summer, the growth scarcely exceeded 4 feet. The plants have no protection; but when they begin to grow, as they do in the early part of the spring, some fern is thrown over the tops to protect the young growth. The hardihood of the Lily was further demonstrated by the fact that three years ago a heap of bulbs was left out on the open ground by accident, and stood the trial of from twelve to fourteen days of frost before they were discovered. They were then covered up, and when the frost had left them, it was found they had received no injury whatever.

CAULIFLOWERS AND PEAS (Amateur).—Plant the Cauliflower in August, and let it stand through the winter to seed the following summer; it is seldom they seed when planted in the spring. We know of no method you can adopt to prevent worms from attacking Peas. This communication was unfortunately delayed in course of transmission, hence the time that expired before a reply appeared.

VIOLA IMPERIAL BLUE PERFECTION (* * *)—This is quite distinct from the *Viola Blue Perfection* as sent out by Mr B. S. Williams. It is pretty, and free-blooming, and likely to be useful in the flower garden. We think it a pity it was so named, as it leads to confusion.

SANDALL'S PLUM (A Scotch Gardener).—We cannot answer your inquiries better than by laying before you the following extract from the 'Gardener's Chronicle':—"What are those beautiful black Plums which are now beginning to make their appearance in Covent Garden Market! Damsons? No; they are far larger and finer, and more beautiful than Damsons. Though of the same beautiful bluish-black colour, they are quite twice the size, if not more. They have a little of the same peculiar taste, and a little of that of the Sloe also, but are not so pleasant to the palate as a Coe's Golden Drop, yet, nevertheless, they are very passable, and especially at this late season, when Plums are Plums. The Plum in question is called SANDALL'S PLUM. This fruit has been exceedingly plen-

tiful this season, and we have become almost surfeited with them, but they are now over in most cases. There may be a few choice Golden Drops, or Impératrices, or Late Reds, or Autumn Compotes, &c., carefully protected in certain places, but nothing in quantity; even the Damsons are over, leaving us nothing but the 'wee' Bullaces for our tarts, pies, and puddings; yet in Covent Garden Plums are still in season, for Sandalls are just coming in. From whence come they, then? Not from France, which has the credit of supplying everything remarkable in Covent Garden, but from the market-gardens round London. It was only on Tuesday last that we saw in one celebrated fruit-garden more than 100 trees of this Plum in one group; trees, too, of no ordinary size, being from 20 to 40 feet high, with large spreading heads, all densely laden with most beautiful black fruit, every little twig, even, being as thickly set as the berries on a bunch of Grapes; many bushels might be seen on a single tree: truly they were a grand sight! Sandall's Plum has many recommendations; it is indeed singular it should be so little known. It is one of the few Plum-trees which produce timber. The tree has a twiggy sort of growth, of the Sloe type, and attains a large size, forming a clean trunk of considerable length, and we have measured some stems 3 feet in circumference. It is very hardy, and a certain bearer. It is one of the very latest, and, from its beautiful appearance, fetches a high price in the market. It has further the great merit of hanging on to the trees up to the very last, and even when quite ripe there are seldom any blown down by the wind. It is very little liable to cracking in wet weather—a failing which is the destruction of so many Plums. It will hang on the tree, and be fit for use during the course of two months—September and October. What a valuable tree, then, would not this be in a private garden—just one to supply Plums for cooking, &c., when wanted, until November! The fruit is of medium size, roundish, of a beautiful jet-black colour, with a thick bloom; flesh reddish, clinging slightly to the stone, moderately juicy, with a smack of the Sloe flavour; an excellent fruit for tarts, &c., and valuable for its lateness. We know little of the true history of this fruit. It originated, we believe, in some of the market-gardens of Fulham, where it is grown, and with Mr Dancer, of Chiswick. It is known simply as Sandall's Plum."

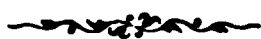
SANDALL'S PLUM.—This Plum was raised some 60 or 70 years since by the late Mr Sandall, a market-gardener, then living at Crabtree, Fulham. The original tree is now dead. I can vouch for the above, having lived in the neighbourhood for the last 40 years, and I have seen the old tree scores of times. It is, as you say, a good late Plum, but it is not a sure bearer, being surpassed in this respect by Prince of Wales, Victoria, and Mitchelson's (the last especially); and another thing against it (in these fast times), it is at least eight or nine years before it begins to bear. After that time it is a prodigious cropper about once in three years. Any one having half-a-dozen sorts or so cannot do wrong in adding Sandall's, but for a small garden, where there is only room for one Plum, I would say, plant Mitchelson's.—'Market Gardener.'

[This also meets the inquiries of J. G. Durham, and a Constant Reader.—Eds.]

VINE BORDER (G. S.).—By using fresh horse-droppings, either in the composition of your soil, or as a top-dressing for your border, you always incur a danger, more or less according to quantities, &c., of producing fungi, which would be injurious to the roots of your Vines. If you have to use manure, let it be partly decomposed at least.

THE GARDENER.

DECEMBER 1870.



TO OUR READERS.



THE Proprietors of 'The Gardener,' finding that Mr Thomson of Dalkeith could no longer devote the time and attention it required to the Editorial management of the Periodical, have entered into arrangements with his brother, Mr David Thomson, Drumlanrig, to take its entire direction. They feel certain that all who know Mr D. Thomson, alike as a sound practical gardener of great experience, and as a perspicuous writer on almost every department of Horticulture, will approve of the selection they have made, and extend to him their fullest confidence.

For the ensuing year a staff of the best practical writers on the various branches of Horticulture and Floriculture has been secured, and every other arrangement made that can increase the value of the Magazine to all who prefer to receive instruction from hands that are practising what they recommend to others.

To save time, all editorial communications for the Magazine should be addressed to Mr Thomson, the Gardens, Drumlanrig, Thornhill, Dumfries.

GARDENING ON THE THAMES EMBANKMENT.

ANY one interested in city gardening (and it is a matter that is often treated of in the horticultural press) can find much to excite their admiration at the present time in what is being carried out along the line of the Thames Embankment, on the north bank of the noble stream that flows through the great metropolis. From Blackfriars to Westminster bridges there now runs a line of magnificent roadway, of considerable width and admirably constructed, which has been designated the finest thoroughfare in Europe. This roadway is placed along by the river, with a broad pavement for foot-passengers on either side of it, and by the edge of this pavement nearest to the roadway, on both sides, runs a line of fine young plants of the Occidental Plane (*Platanus occidentalis*) for a considerable distance. These were planted two years ago, and with very few exceptions they have succeeded well, and are now growing into nice trees with well-furnished heads. All these plants, averaging from 16 to 18 feet in height, were obtained from the Continent for the purpose ; and during the present winter the remainder of the thoroughfare will be planted in a similar manner. Already 250 trees have been placed there, and another 150 trees will complete the remaining distance. The trees are planted 20 feet apart, and it is expected that in ten years' time each alternate tree will be removed, so as to allow space for the remainder to develop themselves. To receive the rest of the trees intended to remain permanently, pits have been dug, 9 feet square and 6 feet in depth ; these are filled in with 1 foot of brick-rubble for drainage, and then with a rich loam obtained from land belonging to the Metropolitan Board of Works at Barking Creek ; for it is under the auspices of this important public body that this great improvement is being worked out. The pits to take the trees which it is calculated will be removed eventually are of less dimensions, being 6 feet square by $4\frac{1}{2}$ feet in depth. After each tree is planted, a square iron grating in four divisions is placed round each tree on a level with the pavement, so constructed that water can be poured into the roots of the trees when requisite, without any necessity for the removal of the grating. Round each tree has hitherto been placed an iron girdle about 6 feet in height ; but as the trees, in the event of a high wind, are apt to sway about and snap just at the collar of the girdle, three stout upright pieces of deal about 10 feet in height are being substituted for the girdles, and serve to keep the trees much more secure.

Between this fine thoroughfare, with its lines of Plane-trees, now universally acknowledged to be the best of all trees for European cities, and the line of warehouses, dwelling-houses, &c., skirting what

was once the river's edge, there is an immense piece of reclaimed land, a good portion of which is being formed into public gardens. To fill up this reclaimed space thousands of loads of soil were required; happily with the progress of the Thames Embankment came the construction of the subterranean way of the Metropolitan District Railway, running close by and parallel with the thoroughfare, and this gave ample material to form the subsoil. Then, to give a suitable top-soil, immense quantities of loam were brought up by water from Barking Creek, well adapted for the growth of shrubs, and nearly the whole of the space to be planted with these is now ready for their reception. Along that portion of the land to be so planted that skirts the old line of the river-side, a sloping bank, rising in some instances 9 or 10 feet, has been formed, with a broad verge of grass towards the river. There is also a similar verge of grass, with borders for shrubs at intervals, along by the promenade; and between the verges runs a broad concrete walk, solid and firm as a rock. The borders will be filled mainly with deciduous mingled with such evergreen shrubs as will thrive best on such a spot, amid the city's smoke and dust. Hollies, both plain-leaved and variegated, *Euonymus* of kinds, *Aucuba japonica*, and a few others, will form the evergreen shrubs; and about the grass will be dotted specimen Hollies, &c., likely to prosper there. Between the walk and the grass, on both sides of the former, there runs a verge of Irish Ivy rather more than a foot in width; this has been somewhat thickly planted, and pegged down on a surface covered with 2 inches of well-rotted manure; and already it is rapidly taking root, and by the middle of the summer it will be a mass of green leaves marbled with a darker hue.

The construction of the concrete paths well deserves a record. A foundation of about a foot in depth is laid of rough bricks, with some gravelly soil thrown over to make it level. On this is laid 4 inches of concrete, which, when it settles down and is well rolled, becomes as hard and firm as a stone pavement. The concrete is formed of gravel well saturated with tar. The gravel is thoroughly heated over a fire, and while hot sifted into two sizes, and the tar mixed with it. A layer of 2 inches of the coarse gravel, covered with a layer of the fine gravel of a similar thickness, forms the surface of the path, and over it is thrown a thin layer of powdered shells or fine shingle from the sea-shore at Brighton; the latter is to be preferred, as the wind is apt to lift the former and scatter it over the turf. This path may perhaps yield slightly on a very hot sunny day, but only in a small degree.

From the roadway the gardens will be separated by means of a handsome iron fence, through which, at certain places, the public will gain access to the gardens by means of gates.

The most elaborate plot of garden will be that at the east end of Somerset House and near the Temple Gardens. Here a large fountain is being constructed ; and round about and near it there will be several beds for flowers and foliaged plants during the summer months. To this spot can come hundreds of pent-up citizens and indoor workers during the temporary respite from labour at mid-day, and in the evening, after their toil is ended, to wander along pleasant paths and round about gay flowers, on a spot that was but a few years ago a portion of the bed of the great river that flows through the city. Truly it is a wonderful transformation-scene ; and it is only those who knew the river-side ere the embankment was commenced that can comprehend the splendid improvement effected which gives a broad line of thoroughfare from the new bridge at Blackfriars to that at Westminster, ornamented by fine trees, with a smiling garden on one side and the flowing river on the other.

The laying-out of the garden and shrubbery-grounds has been carried out by Mr Joseph F. Meston, under the superintendence of Mr Alexander M'Kenzie ; and Scotland has reason to be proud of the achievements of her two worthy sons.

R. D.



NOTES OF THE MONTH.

THAT towards the close of a long and useful life in the service of horticulture, Mr Thomas Rivers of Sawbridgeworth should be selected to receive some token of the high esteem and regard in which he is held by many of his brother horticulturists, is not to be wondered at. Pomology, especially, owes much to Mr Rivers. He has laboured unweariedly, and has lived to reap the reward and enjoy the fruits of his labour ; and other men have entered into the results also, and gratefully partaken of them. Of his busy life, with its quiet energy working out into practical result and certain good, that experimentative faculty he was so fond of bringing into active play, may be written the words of Professor Graham, "Man becomes a part of the vast world in which he lives, and everything becomes a part of him ; and hence it may with propriety be said that man is the soul of the world." Mr Rivers has moved about in the world of horticulture for years, heaping up large stores of knowledge, which he, with ungrudging desire, has constantly given forth for the benefit of his fellow-creatures. Mr Rivers, having a great dislike to testimonials, will not accept one, but it is proposed to honour him by raising a subscription for the purpose of having his portrait painted, as a memento of his worth and the kindly regard in which he is held.

No subscriptions will be solicited ; all already received have been voluntarily given. Dr Robert Hogg, 99 St George's Road, Pimlico, London, S.W., is receiving subscriptions for the purpose.

A meeting of the subscribers to the Veitch Memorial was held in the Royal Horticultural Society's meeting-room at South Kensington, on the 21st of October, to receive a report of the Central Committee as to the mode in which the money raised should be expended. Altogether the sum of £1012, 12s. 9d. had been subscribed ; the necessary expenses incidental to giving effect to the wishes of the promoters had amounted to £121, 14s. 5d., thus leaving a net amount of £890, 18s. 4d. to be expended in furtherance of the special object for which the fund was raised. Many propositions had been made as to the best mode of disposing of the surplus, and of these two were singled out as being the most likely to serve the end proposed to be sought—viz., the establishment of certain Veitch Prizes, "to be offered at such exhibitions of the leading metropolitan Horticultural Societies in the three kingdoms as the trustees may judge most conducive to the object, the culture of both flowers and fruits being considered ;" and that of adding a Veitch Pensioner to the Gardeners' Royal Benevolent Institution. Although there were many supporters of the last-named proposition, the balance of favour went with the former, and after some discussion it was adopted. The following gentlemen were nominated as trustees, in whose names the money should be invested—viz., George F. Wilson, Esq., F.R.S., the treasurer, and Mr Thomas Moore, the secretary to the fund ; and the following five others as representing the amateur and practical gardeners of the United Kingdom—namely, Mr Harry James Veitch, Dr Robert Hogg, and Mr Zadok Stevens, gardener to the Duke of Sutherland, Trentham, as representing England ; Mr William Thomson, Dalkeith Palace Gardens, as representing Scotland ; and Dr David Moore, of the Glasnevin Botanic Gardens, as representing Ireland. The proposal to provide a portrait of the late Mr Veitch, which was a part of the original programme as one of the leading objects to be attained, had been anticipated by Robert Crawshay, Esq. of Cyfartha Castle, Merthyr-Tidvil, South Wales, who had presented the Veitch Committee with a portrait of the late Mr James Veitch, which had been painted expressly for the purpose ; and this, with the permission of the Council of the Royal Horticultural Society, now finds a resting-place on the walls of the Royal Horticultural Society's meeting-room. On many grounds the prize scheme was to be preferred to that which would simply add a pensioner to the list of the Gardeners' Benevolent Institution. The 'Gardeners' Chronicle' said with much truth that the memory of Mr Veitch would be best honoured "by keeping it prominently before the gardening world as

an incentive to the same energetic, persevering efforts for the advancement of horticulture which we had so often witnessed and so much admired in him ; and if we now regard the memorial as inclusive, and intended to perpetuate the memory of both father and son,—the zealous horticulturist and the successful traveller,—the same sentiments will equally apply. Surely this will be more effectually secured by spurring on the active man in full possession of his powers and in the full practice of his profession, than by pensioning the effete though worthy man whose day of action is past, and who must, in the ordinary course of things, soon pass away from the scene. There can be no question about it ; it must be so. The stimulus to action must be more effectual than the sop to repose in keeping up the memory of a horticultural leader, and we hence conclude that the right thing has been done.”

Landscape-gardeners might take a hint from the common Hawthorn (*Cratægus oxycantha*) at the present moment, when, in keeping with the unusually fructiferous character of the season, it is found in most instances literally clothed with red berries. When seen standing out against the naked outlines of leafless trees, or even as an isolated specimen in a piece of park-land, it lights up the scene, and gives a tone to the barrenness around it. Berried trees during winter are of great value in adorning our woodlands, and deserve to be planted as much for this especial service as for the sake of the flowers they yield in the spring. Somehow most, if not all, deciduous shrubs give tints of red during the leafless portion of their existence, and cheer, while leafless, the dulness and decay of winter. Hence an eye to effect in winter is as important, in a certain degree, in the construction of a landscape, as during the summer, when there

“ Shines beauty in its vernal year,
Bright, sparkling, fascinating, clear,
Gay, thoughtless of its doom.”

For the purpose of lighting up shrubbery borders, woodland ways, belts of trees, plantations, &c., at this season of the year, scarcely anything can compete with variegated Hollies, that shine out with their richest garniture of gold and silver in the depth of winter. It is singular to note how a lengthened patch of variegated Hollies, thrown into the line of a belt of trees or line of shrubbery-border flanking a walk, will seem to shorten its length, even to a remarkable degree. Lately a striking instance has been afforded of the ill effects arising from placing sheets of ornamental water or small lakes near to groups of trees on the banks where dark-foliaged trees, and especially Firs, predominate. It has no doubt struck many others long since, but it is worth a notice at this time

of the year, when the effects are made perceptible. A large pond of water (in the instance referred to) occupied a hollow surrounded on three sides by trees, including some Firs, and in consequence of the shadow being thrown across the water, it had the dark stagnant appearance, when looked at from a slight elevation, peculiar to ponds in close unfrequented places; on descending to the brink, the water appeared quite clear. But as water is generally looked at from an elevation, the dark shadows come in the line of sight. As a matter of course, small sheets of water are the most likely to be so rendered unsightly.

Mr Barron, of the Chiswick Gardens, has just commended to public notice a material for grafting purposes that is likely to be found very useful to cultivators generally. It is simply a sheet of indiarubber, which can be obtained at quite a small cost per square foot, and then cut into the lengths required for use. Previous to using the material, it is washed in clear water, and dried by means of placing it within the folds of a cloth or handkerchief. It can be obtained at the shops both dressed and undressed, but the latter is to be preferred. The operator cuts his sheets into pieces of about an inch in length and an eighth of an inch in width, the size being regulated by the space to be covered. This length of material is passed round the part of the plant to be covered, and being pulled tightly as the windings are made, becomes elongated, and holds the graft with a firm grip. A pressure with the thumb-nail fastens the end securely, and the effect of the external air is to render it even more durable, hardening the material and keeping it firm. For what may be termed fine grafting—that is, as applied to small and delicate plants—nothing appears to be better. For larger trees in the open air, the Mastic L'homme Lefort, or cold grafting-wax, can be highly recommended. Ready for use at all times, no work of preparation is required; the thing is always ready to hand, and has been found to be both effectual and durable.

The Royal Horticultural Society's great summer show at Nottingham will be held a month earlier than usual, the time being no longer fixed according to the date on which the annual meeting of the Royal Agricultural Society has been held. The Nottingham Exhibition will be held on the 13th of June, and continue open to the 17th. This early intimation of the date will enable gardeners and others to make their arrangements accordingly. A month earlier than the time at which the show has hitherto been held is a matter of great importance in some districts.



NOTES ON HARDY HERBACEOUS PLANTS.

(Continued from page 516.)

CRASSULACEÆ—*cont.*

Sempervivum—*Houseleek*.—This family is possessed of the strongest tenacity of life—the generic name implies that; and it is highly interesting on account of the rigidly geometric arrangement in rosettes that the leaves of most of the species take. Their extraordinary power of life renders them very useful for many ornamental purposes that are very desirable, but not by any means generally adopted. Many a stump and block and naked rock might be appropriately garnished with them; and those objects, often inert enough and uninteresting in themselves, but from various circumstances, perhaps, irremovable, would by such adornment become attractive and beautiful; and quaint old trees and ruins may be enriched in their own style by the same means. The natural habitats of the Houseleeks—house-tops, walls, rocks, and generally dry exposed stony or gravelly places—at once suggest their fitness for the uses indicated. They establish themselves easily in such places in nature; and in practice to fix them in any position is a very simple matter, all that is needed to that end being a little clay and horse or cow dung, well mixed, as for use in grafting, on which to stick the offshoots, when, even if the surface is vertical, they may be left to themselves without any misgivings as to success. The adaptability of some of the species to another and very different use in flower-gardening has been noticed and taken advantage of by some of our best gardeners recently, and is becoming popular. I allude to the new method of bedding out, in which various *Sempervivums* are used to define intricate geometrical figures in beds or borders, the spaces being filled, according to the taste of the parties concerned, with flowering plants, or with plants of different foliage, with a view to the production of contrasts in form or combinations of colour and form; and for defining with precision intricate lines and figures, there is perhaps nothing in the vegetable kingdom more fit than these peculiar plants; but for this purpose they must be used in single rosettes, which entails the necessity of their being overhauled annually in spring, so as to remove all off-sets or young rosettes which would mar the lines. They are as easily cultivated on flat surfaces on the ground-level as on any elevation, and though so well adapted to exist on short commons, do equally well in the richest soil, but it is always well to drain well under them.

S. arachnoideum—*Cobweb Houseleek*.—An extremely interesting and curious plant. The rosettes are small, composed of oblong sharp-pointed leaves, thickly set on both surfaces with soft, short, glandular

hairs. The tips of the leaves are connected by radiating lines of delicate white threads, so interwoven with each other as to suggest the idea that a spider had been at work upon them. The flower-stems rise a few inches high. The flowers are pink, composed of twelve or more spreading petals, and appear in July and August. Native of the Alps and Pyrenees.

S. arenarium—*Sand Houseleek*.—The leaves in this species, in small rosettes, are lance-shaped, smooth above and below, but fringed on the margin. Flowers composed of six yellow petals. Height about 6 inches. Native of the Tyrol.

S. Californicum—*Californian Houseleek*.—A very handsome species, with broad hemispherical rosettes, composed of oblong, glaucous, brown-tipped leaves, terminating in an abrupt sharp point. Flowers purplish, composed of twelve or more spreading petals, appearing from June till August.

S. Funckii—*Funck's Houseleek*.—Leaves in rather large rosettes, oblong, with an abrupt sharp point, downy above and below, and fringed with long hairs. Flowers pink, with usually twelve petals, appearing in July and August. Native of the mountains of Tyrol, Carinthia, and Salzbouurg.

S. globiferum—*Globular Houseleek*.—The rosettes in this are rather small and open in the old ones; very small, close, and globular in the young offsets. Leaves lance-shaped, smooth above and below, but fringed. Flowers yellow, few, but very large; petals more than twelve.

S. hirtum—*Hairy Houseleek*.—Leaves oblong, acutely pointed, hairy on both sides, and fringed. Flower-stems from 9 inches to 1 foot high. Flowers white, petals six, the tips hairy; appearing in July and August. Native of Italy and Austria.

S. montanum—*Mountain Houseleek*.—The rosettes are close and compact. The leaves are oblong, widening somewhat upwards, but terminating in an abrupt sharp point, and fringed. Flower-stems 6 to 9 inches high. Flowers dull rose or purple; petals twelve; appearing in July and August. Native of the Alps.

S. soboliferum—*Hen-and-Chicken Houseleek*.—In this the rosettes are close and compact, composed of oblong, wedge-shaped, sharp-pointed leaves with fringed margins. Flower-stems about 6 inches high. Flowers pale yellow; petals six, fringed. Native of Germany.

S. tectorum—*Common Houseleek*.—The rosettes are large and hemispherical, composed of oblong lance-shaped leaves, terminating in a sharp rather abrupt point, the margins fringed. Petals twelve or more, pink; appearing in early summer, and continuing late. Native of many countries of Europe, high on mountain-ranges, and not uncommon on walls and house-tops in Britain.

GATHERING, CARTING, AND STORING ICE.

THE provision of a quantity of ice is one of the duties that fall to the lot of the gardener, it being invariably his function to provide a stock sufficient to meet the demands of the family for the year. In the case of a large establishment this is a very important duty, when it is considered in how many ways ice is used during the summer. In my own case, not only have I to keep the hall well supplied, but as it is situated in a somewhat remote country district, the medical men fly here in cases of emergency to get a supply necessary to aid them in the healing arts. I am happy to know that in some instances lives have been saved owing to our ability to supply this valuable agent in cases of urgent danger and necessity.

I have thought it worth while to set down some of my experiences in regard to this work for the December number of the 'Gardener,' as it is during the end of that month or the beginning of January that we obtain our stock of ice; and indeed any opportunity for doing this should never be lost, as the chances are sometimes limited in number.

Early in December the place in which the ice is to be deposited is prepared ready for its reception when it appears. I like to store it when about 4 inches in thickness, though some persons prefer it thicker. And then we proceed to fill the house, which is 16 feet in depth and the same in width, with an arched roof like that of a brick oven; on this there is 3 feet of soil planted thickly with Evergreens, and the icehouse occupies a position on the north side of the premises, the door leading to it being on the west side of the house, with a passage built of brick arched over, with three doors at intervals, which lift from their hinges when required. This passage is 10 feet in length and paved with flagstones, and when the pit is reached it is some 10 feet below the ground-level. At the centre of the bottom of the house is a main drain, which receives the water from four smaller ones; and over these fagot-wood is placed for drainage also, as I find it very important to allow the water furnished by the melted ice to run away fully, as the bulk does not keep so well if the drainage be not perfect. Over the layer of fagots is placed another of good wheat-straw, and as the ice is built up in the house, a good thickness of straw is placed between it and the wall.

The ice is obtained from a pond about 400 yards distant, and is brought to the house in carts, shot down at the door, and broken to pieces about the size of an ordinary brick before it is stowed away. I know that some recommend it should be broken smaller, but I can see no advantage in doing so, rather the reverse, as the act of break-

ing it small often makes it dirty, and the dirt so collected will show itself when the ice is used. The carts employed in bringing it to the house should be thoroughly cleansed before being so used.

The house here takes about sixty loads; and by using four carts, six horses, twelve men, and two boys, we manage to fill it in two days when ice is plentiful. In addition to their usual pay, plenty of beer and bread and cheese is allowed the men and lads employed. We also use about a load and a half of straw—the mass of ice is thoroughly encased in it; and when the ice settles down into a mass it is well trodden by the feet and beaten down with a large wooden mallet.

The whole cost of filling our house may be estimated at £7. A few years ago, when we had to bring a good deal of the ice from a large horse-pond a half-mile farther off, the cost of filling it was three or four pounds more, but the ice was never fit to place on the table.

WILLIAM PLESTER.

ELSENHAM HALL GARDENS.



STATICE RATTRAYANA?

How often do we meet with this splendid plant in a wretched state, where it neither does credit to the grower, nor gratifies the taste of any one accustomed to behold it in a thriving condition! Pitiably, unhealthy-looking objects, flowering wonderfully well it may be, but not as the reward of good, kindly, and judicious treatment. Such miserable subjects never become the glorious specimens they would under different and more favourable conditions. As I have been somewhat successful in the culture of this most useful decorative flowering-plant, I will endeavour as concisely as possible to detail my mode of treatment. There are two general principles that I would put prominently forward at the commencement, which if acted upon will lead to success with this plant. 1st, It is a gross feeder; 2d, It must be kept constantly growing—there must be no sudden checks, otherwise the effects we too often see will be produced.

After the plants have begun to grow in spring is the proper time for taking cuttings, which I insert singly in thumb-pots, and plunge in bottom-heat up to the rims of the pots. I shade during sunshine, and maintain a close moist atmosphere, which must be given until they show signs of being rooted. So soon as the roots appear at the sides of the pots I at once shift them into 4-inch pots, using a compost of two parts good fibry loam, one part cow-dung well decomposed, and one part leaf-mould, with a little silver sand added, placing a few

pieces of dry cow-dung (which I gather in summer) over the crocks at the bottom of the pot. I put them again into their old quarters (bottom-heat), and give them a good shower overhead through a rose watering-pot. I shade for a few days until the roots have begun to run in the pots, up to which time they get no more water than a slight shower through the rose as before; but after the roots begin to fully occupy the pots I give them plenty of water, adding a little sheep-dung and guano-water every alternate time or so moisture is given. They are thus treated until they have fully occupied their pots, and before they have become pot-bound, when they will require shifting into 7-inch pots; but a few days previous to this I take them out of their quarters wherein they have been plunged, in order to harden them a little. They are then placed in a spare corner in the vinery; and, as before, I give them a little water overhead with the rose, doing this morning and evening until they show signs of being established in their pots, after which they are liberally treated every way, all bad leaves picked off, and flower-shoots nipped, until about August, when they may be introduced to the conservatory. Water must be sparingly given all winter.

About February they may be introduced into a vinery just started, and after they have begun to grow a little, may be shifted into 12-inch pots, in which I grow them freely all the season, keeping clean and nipping off flower-shoots until July, when they are taken to the conservatory again to be the admiration of all, attending to them regularly with copious manure-waterings. In shifting from a 7-inch to a 12-inch pot care must be taken not to sour the soil by over-watering; to prevent this I give the soil no water except what falls down through the leaves when they are watered with the rose, until the pots are pretty well occupied. From subjects so treated I can now (September) boast of plants, struck between seventeen and eighteen months ago, and treated as detailed above, that have made specimens 30 inches in diameter of foliage, with no less than thirty-one spikes of bloom, and more continually appearing.

J. F.

[Statice "Rattrayana" is not known at Kew; what is our correspondent growing under this name?—Eds.]



THE CULTIVATION OF HARDY FRUITS.

THE PEACH AND NECTARINE.

(Continued from page 491.)

THE disbudding of the trees next demands attention. Our practice is not to do the whole operation at once, but to go over the tree at least twice or thrice, at regular intervals of a week or so. The first

time I remove all the worst-placed and unhealthy-looking buds (if any) when they are about $\frac{3}{4}$ of an inch in length. The next time all the buds are removed until only four or five are left upon a shoot of 15 or 18 inches. The third and last time all the young shoots are removed except two or three, which are so disposed over the shoot of last year as to leave enough to carry on the crop, and provide enough wood to give a good selection for the succeeding year. In performing this operation care is always taken to retain one of the buds at the base of each shoot, so that there may be no possibility of having at the end of a few years long bare stems, such as are always to be met with in trees managed after the method recommended by Mr Simpson at p. 500 for last month. The method he claims credit for having discovered, and which, he informs us, is now becoming general, is not new, being as old, I think, as he is himself. I know that it is 25 years since it was adopted at a certain place to which I could point, and the result has been disappointment and failure in every sense. For a few years they did very well, and appeared to flourish much in the same way as those at Wortley; but before they were 15 years of age they were useless for practical purposes, the whole constitution of the tree having given way from no other cause than general debility, engendered by over-exertion in youth—much in the same way as human nature will give way in the bloom of manhood from the very same cause. If we want to succeed as horticulturists, we must study nature very closely, and bring our knowledge of things known to bear upon our everyday occupation, so that when we adopt unnatural means to accomplish a certain purpose, we may employ a counteracting power to remedy the evil effects of the unnatural means used. The trees to which reference has been made above are long since removed, and young trees have taken their place, which are subjected to a very different style of management, and promise fair to live, flourish, and produce good fruit for generations to come, as all good trees of either the Peach or Nectarine ought to do if properly managed. Most of the Peaches here have been full-bearing trees for the last 50 and 60 years; and the health of the trees, and the quantity and quality of the fruit produced, will bear comparison with that from any trees, old or young, in the kingdom. I must not, however, be blamed for egotism, as I claim no credit for such results, the entire credit being due to my venerable predecessor, Mr Shiels, who, I am glad to say, still lives to rejoice in the labours of his early days, and who, in his visits here, seems proud to know that the result of his judicious management is still making its mark upon the place which he so long filled with credit. Evidence such as this should not be thrown aside for the hastily-arrived-at conclusions of one or two summers' practice.

When we know of two methods having been adopted, the one succeeding and the other failing, we are of those who cling to the one which has produced the best results, whether it be called old-fashioned or new. To be old-fashioned and successful cannot be a crime, but to be new-fashioned and fail must be a crime, say what others may to the contrary.

After the disbudding season is over, the after-management of the trees is very simple. The laying-in of the young shoots, and the stopping or cutting out altogether of those which appear to be too gross, forms the greater part of the work. As soon as the fruit begins to make its last swelling, it ought to be exposed as much as possible to light and air, in order to produce flavour and colour. Where the leaves overshadow them, they ought to be either folded gently back, or have a portion of them removed altogether.

In gathering the Peach and Nectarine, they require to be gently handled, or bruising and after-discoloration will be the result. To obviate this, the fruit should not be touched until the colour and appearance give a guarantee that they are ready to pull. When this is the case, let the hand be passed behind the fruit, with two fingers on either side of the foot-stalk, holding the hand in such a position that the fruit, when gently pulled, will fall into the palm of the hand. If pulled after this manner, hundreds of dozens might be gathered without leaving the slightest mark, or in any way doing injury to the fruit. Some people allow their fruit to fall into nets. This I do not like, as I fancy that a Peach, when allowed to hang until it falls, has lost a deal of that richness of flavour so peculiar to it.

It may not be out of place to make a few remarks regarding the packing of Peaches before I pass to the concluding portion of my subject. Some gardeners roll them in cotton-wadding, without anything else. This is an abominable practice, as the whole bloom and beauty of the fruit is destroyed, and so much of the cotton is left adhering that it is positively unsightly to look upon them. Others roll them in tissue-paper, and afterwards pack and roll them in cotton-wadding. Some use boxes to hold one or two dozen, as the case may be; others have tins made with compartments for each fruit, into which they are placed and packed with wadding. All these methods are attended with considerable expense; in fact, in some cases the expense of packing is equivalent to the value of the fruit. My plan is a simple and inexpensive one. The boxes hold one dozen, 4 × 3, fruit. Each fruit is rolled in paper. I keep always a good supply of short grass from the cutting-machine, taking care to have it always thoroughly dry. Into the bottom of each box an inch or so of this material is

placed, when the fruit is packed into it, having about half an inch of the same material between each. After the dozen are placed in position, the box is filled up with the grass and screwed down, and will travel a thousand miles without the slightest injury, provided the fruit has been gently handled in the process of packing. This is the way I have packed all the fruit for my employer's table during the London season for years past, and I have reason to know that every fruit sent from here has arrived and been placed upon his table in perfect condition, although the distance they travelled was over 400 miles, the number of boxes sent each year averaging thirty.

The principal diseases to which the Peach and Nectarine are subject in this country are canker, gum, and mildew. Canker is generally the result of the trees being planted in a too deep, damp, and uncongenial soil. To remedy this, upon the first appearance of the disease let the trees be lifted and replanted in well-made new borders after the manner already described, and the result will be new vigour and health to the tree, unless the disease has got too firm a hold upon its constitution. Gum is generally the result of bad pruning, or carelessness with the hammer or any other instrument in bruising and wounding the bark or branches of the tree. To prevent this, careful management is the antidote. If, however, the disease appears to any great extent, the best plan is to remove the tree altogether, and have it replaced by a young healthy one. Mildew is a disease to which some of the varieties of the Peach are more liable than others; and from this fact I conclude that, although the disease is to a certain extent the result of external agencies, yet from constitutional weakness some sorts are more liable to the attack than others. I have always noticed that mildew follows on the trail of a continuation of cold, parching weather, with the wind blowing from the east or north-east. In genial and showery weather we seldom see any traces of it, so that certain conditions of the atmosphere, with the wind in certain quarters, has much to do with its attacks. Where the trees are regularly syringed with water, even should such weather prevail for a time, the attack will not be so severe as those which have not been syringed. The best remedy, however, and also the best preventive, is flower of sulphur applied with a sulphurator upon the first appearance of the disease, or, what is perhaps better, let it be applied as soon as there is the least appearance of a continuation of such weather as would be likely to court its presence. The only other disease to which it is necessary to call the attention of the Peach cultivator is blistering, wrinkling, and curling of the leaves. The cause of this may be looked for in badly-prepared, too deep, cold, and wet borders; in fact, it is the usual precursor of canker, and traceable to the same causes. Seeing

this to be the case, I can only add that the cure must also be the same.

The insect enemies of the Peach and Nectarine are not very numerous, but are sometimes very troublesome. Green-fly is perhaps the chief of these. As the cultivation of the Peach and Nectarine as hardy trees places them in a position in which they cannot be easily fumigated, the best means to adopt to destroy this little pest is to keep the trees thoroughly syringed, adding a little tobacco-juice for a few times should the enemy appear powerful. Thrip, should it make its appearance, may be destroyed by the same means.

Red-spider (*Acarus telarius*) is an enemy not so easily disposed of; yet the trees are not liable to its attack if the roots are moist enough and the branches frequently syringed. To destroy it, heavy and frequent syringings are the best cure.

The caterpillar of the figure-8 moth (*Episema coeruleocephala*), which is very troublesome at times upon Peach-trees, by eating and destroying the foliage, should be picked with the hand, and at once destroyed.

The Tortrix Woeberiana, or Plum-tree tortrix, is sometimes injurious to the Peach; but as I have spoken of it when treating of the Plum, it is not necessary to do more than name it here.

The Tenthredo populi, or Poplar saw-fly, makes its appearance about the end of April. It is a large insect, larger than an ordinary house-fly. The female arranges her eggs, which number about forty, in lines along the surface of the leaves. In a few days these produce a whitish grub, which shelter themselves within a web which they at once begin to spin. As their period of grub-existence extends over six weeks, it will be easily perceived that a very few females in spring may be the cause of much damage to the Peach, as the young all have to be fed upon the fresh and tender leaves for that period. At the end of that time they drop to the ground, form cases in which they bury themselves beneath the surface of the soil until spring, when they emerge perfect insects, to become the parents of another generation of Peach-tree depredators. The fly ought to be killed as soon as found in spring, the eggs searched for upon the leaves and destroyed, while the surface-soil of the border ought to be removed in winter to the depth of 3 or 4 inches and burned, in order to insure, as far as possible, the entire destruction of the whole family.

Earwigs (*Forficula auricularis*) are generally very destructive to the ripening fruit. To destroy them, cut bean-stems in lengths of a few inches, placing them on the ground and among the branches. Into these the enemy will retreat, and from thence are easily blown into a bucket of water prepared for their reception.

The scale (*Aspidiotus conchiformis*) sometimes is very hurtful to the Peach and Nectarine. Should it make its appearance and increase to any great extent, the tree ought to be gone over, and the little intruder rubbed off with a hard brush in summer. In winter this operation may again be performed, and the tree afterwards painted over with a gentle mixture of tobacco juice, black soap, and sulphur, with soot or clay added, to give the whole consistency. This, in most cases, will meet the end in view upon the first, and almost certainly upon the second, application.

JAMES M'MILLAN.

(*To be continued.*)



THE CULTURE OF GOLD AND BRONZE AND VARIEGATED ZONAL (TRICOLOR) PELARGONIUMS.

As the winter approaches, bright colours seem to become more bright, and certainly more attractive and valuable, as leaden skies and dull days prevail. With the decline of flowers comes the necessity for foliaged plants to supply their place, and so the continuity of decorative agents is sustained. It is at this time that the subjects at the head of this paper come in to render valuable aid, when their beautiful leaves are seen to the best advantage.

The effect of a few of these plants in a greenhouse, when neatly grown and well coloured, is very charming; and the value of nice, young, gay-looking plants for table decoration can hardly be overestimated. Many objections have been urged against the tricolor section of Pelargoniums, on the ground of want of vigour of constitution; but this experience must have been in a great measure owing to some defect of cultivation. To such ones I say try again, for there can be but little difficulty about the growth of any plant that can be sustained in vigorous health during the winter in a temperature varying from 40° to 50°. This is the case in the matter of both the gold and bronze and tricolor sections of Pelargoniums.

There is certainly some difference of detail in the mode of treating these two divisions, and therefore it will be advisable to dwell on them separately, and I will take the tricolors first.

As to Soil and Potting.—Like some other plants, Tricolor Pelargoniums will grow in almost any soil; but that best adapted is a combination of two parts of light fibry loam, broken up into small lumps—one part leaf-mould, the other part composed equally of well-decomposed horse-droppings and river-sand. I am proceeding on the assumption that the cuttings put in some time previously are ready for potting.

Supposing the cutting plants are strong, and in small 60-pots, the shift should be made into pots fully two sizes larger. The operator should commence by crocking the requisite number, giving double the quantity of drainage usually afforded other plants. The pots should be scrupulously clean. A little fibry material from the soil should be placed over the crocks, then some fine soil. The plant should be carefully turned out of the pot it has previously occupied, the crocks removed without doing damage to the roots, the plant placed in the new pot, and the soil pressed firmly about it. Where perfect drainage exists, firm potting is of great importance; it prevents a too free evaporation of the moisture in the soil on sunny days, sustains the plant for a more lengthened period, and saves the trouble of continual dribblings of water, which not only consume time, but are also hurtful to the plants. If the potting compost be at all damp, no water need be given after potting. It is a good plan to thoroughly soak the plants that are to be potted with water the day before being shifted into the new pots. When this is done, eight or ten days after potting will be a good time to administer water for the first time, as at this period the roots will be finding their way into the new soil that surrounds them. When water is given, let it be given abundantly, and not a mere surface sprinkling. The temperature of the water given should be about 60°.

General Attention.—It is of small importance what kind of structure the plants are grown in, if the conditions under which they flourish best are supplied. These conditions are, a sunny exposure near the glass, in a light and airy position, in a temperature ranging from 40° to 60° when the sun shines. A higher temperature is likely to prove injurious, as the growth becomes weakly, drawn, and colourless. From 36° to 38° will not be so injurious as over 60° at this period of the year. If the cultivator could command the sunshine and cool soft air of September all the year round, he would have exactly the condition of atmosphere best adapted for the growth of Tricolor and Bronze Pelargoniums. Let it be understood that all cold draughts of air should be excluded—*i.e.*, they should not be allowed to play directly on the plants.

All leaves should be removed as they decay; it is best to detach the leaf at the point where it joins the stem, leaving that to drop of its own accord. This prevents any damage to the stalk by displacing the leaf-stems while they are yet green. The plants should be turned about at intervals to secure uniformity of growth. As soon as the cutting-stem is 4 inches in height, remove, by using the point of a knife, the two uppermost leaves and shoot while yet undeveloped; this will check the upward growth, and cause side shoots to appear,

which should be pinched back in their turn to secure a nice bushy habit. This course of treatment will lay the foundation of well-grown and symmetrical plants. Continue thus to train and turn about the plants, and remove dying leaves ; repot when the roots reach the sides of the ball as before, using pots two sizes larger to succeed those the plants have occupied.

By this time the winter will have passed away, and the plants be growing apace. A vinery just started will now be an excellent place in which to stage the plants, near the front ventilation. The temperature which best suits the vines at this stage will be that best adapted for the Pelargoniums, so long as it does not rise much above 60°. But when it becomes necessary to raise the temperature of the vinery above that point, the plants had better be returned to their old quarters.

At the time of the next shift, if the plants are in vigorous condition, a little bone-meal (not bone-dust or broken bones, but a fine bone-flour) may be added to the heap of soil in the proportion of about one-tenth. This will stimulate the plants to make considerable growth, and is to be preferred to manure water.

Up to the time that the leaves begin to colour, pure water should be given ; then, when the leaf-coloration is required, some weak cow-dung water may be given, with a small portion of soot added to it : the last-named material greatly helps the development of colour.

Diseases.—Only two things bearing this designation, that I am aware of, affect these divisions of the Pelargonium ; the one “spot on the leaves,” the other “black-rot.” Both of these attack the growth, and invariably result from decay of the foliage. The worst to be eradicated is the spot, as it seems to exist in the blood of the plant ; and my experience leads me to conclude that the malady is communicated by the prevalence of an impure atmosphere or bad ventilation. This, at all events, agrees with my own experience, and I am confirmed in this conviction by invariably finding that not one of the Pelargoniums, from the strongest and most vigorous grower of the ordinary zonal section to the most tender tricolor, will exist for a few weeks in the conservatory here without spot making its appearance, and this at all seasons of the year. One of the many faults belonging to the conservatory is defective ventilation. Whether my theory be right or wrong, however, this much is certain, that no sooner are the plants placed in another plant-house, after removal from the conservatory, than they begin to mend, provided their stay in the conservatory has not been too prolonged, in which case they die of the disease. Some authorities attribute these maladies to over-feeding, and to some extent this may be true ; still I have never experienced

such to be the case when the plants are grown in the open air, unless the plants had been raised from cuttings taken from those affected by disease.

The most effectual remedy to apply to affected plants is to turn them out of their pots, shake the soil from the roots, cut them back, wash those that are left after removing every diseased leaf, repot in a poor mixture made up of sand and leaf-mould, and give the plants a light, airy position.

(To be continued.)



HINTS FOR AMATEURS.—DECEMBER.

IF the weather should remain mild, and not too wet, garden operations may be hurried forward as directed last month. We again repeat that the success of vegetable growers mainly results from properly preparing the soil, and doing it early. A leading article in a contemporary has some good practical remarks on this matter. Treading the ground, when very wet, is an evil which should be strictly guarded against. If early Peas are to be sown now or in January, the surface of the soil cannot be made too free; and it is much in favour of the seed if a quantity of old soil from pots, &c., can be placed above and below it in the rows, as growth will then start more freely. Most cultivators are aware of the value of warm dry soil for newly-sown seed. If early-sown Peas should appear through the ground, a covering of dry soil of some kind should be placed over the young tops, or the earth drawn up to cover them. When the weather is frosty, it gives a good opportunity of getting out manure; it should not, however, be left exposed to the weather, but its goodness kept in by a covering of earth. Leaves, turfs, sand, manures, and all kinds of useful garden-material, may be collected when other work cannot be carried on. Everything in the shape of soil should be harvested dry; some who cannot get it under cover thatch it to keep it dry. Pea-stakes may be made, standing them on their ends, keeping them flat, and placing them compactly together. Making and cleaning off old names of labels may have attention. Stakes for plants may be made of fresh pointed. Trimmings of Thorn hedges, Filbert and Apple trees, tied in straight bundles and stored till required, make useful flower-stakes in absence of better material. All operations, such as draining, improving fences, or other work apart from the garden, may have attention while the season is not so pressing. See that roots of all kinds are not decaying, and also secure plenty of Parsnips, Jerusalem Artichokes, &c., under cover, to have them at hand if severe frost should



set in. Broccoli should be looked over frequently, and placed under protection whenever it is fit for use, otherwise frost may destroy the heads. Celery in damp localities will be more easily kept under cover in sand than in the open ground. Turnips of useful size may also be taken in and covered with a little straw, but kept cool; or if they are to be left in the ground, the soil should be drawn over the roots. Some plant early Potatoes at this season, which must give extra trouble and care. We never practised this system except in frames and other structures; then the best of protection and care are necessary. In damp low-lying localities the early planting of Potatoes is an unnecessary evil. The tubers should not be placed in close heated quarters, as they would soon exhaust themselves with premature growth. Potatoes, when forced early, require very little heat either at top or bottom, as they would grow all to leaf, but plenty of fresh air and light should be admitted. Cold frosty air, when the tops were above ground, would soon put an end to them. The tubers do well when they are sprouted in boxes or pots, covered with light earth, before planting them out. They succeed well on a bed of leaves, with a little dung well mixed to keep a gentle steady heat. A foot of sound healthy loam is necessary to rear good crops.

If early Cucumbers are to be forced with dung heat, well mixed material should soon be in hand to raise the young plants; but where manure, &c., is scarce, it is well to let early forcing alone for the present, as much labour and material is necessary to keep up warmth through the winter. Rhubarb, Seakale, Chicory, and Salads of all kinds, require the same attention as formerly advised, and quantities should be brought forward as demand requires, giving careful attention when heat is supplied by fermenting material. We have seen crowns of Rhubarb and Seakale destroyed when the manure has been neglected for a single day. Rain often cools or suddenly raises the heat of the material. The seed-list may now be got ready, and any kinds of vegetables, however good, which have never done well in the locality, should be kept out, and good useful kinds substituted. We have often gained much information on this matter from cottagers, both in regard to fruits and vegetables. All the seeds left over from last year, which are fresh and good, should have a note made of their quantity, as seeds on hand (especially of the Brassica tribe) are often better than those newly bought. Making out a seed-list, if economy and useful articles are objects, requires practice and forethought to do it with success. Very "cheap" seeds often turn out very dear in the end, to say nothing of disappointment. However, respectable vendors are careful of their good name, and will not take undue advantage of the inexperienced willingly. Mistakes often happen with the most

careful. Bad seed is what we scarcely ever had supplied to us, except with a double quantity sent, and caution given to "sow thick."

All the leaves will now be off fruit-trees, and pruning may be finished as early as possible. Keeping in mind, however, what birds are likely to do later in the season, the advice formerly given as to keeping up a supply of young wood in both trees and bushes should be carefully borne in mind, as vigorous plants can soon be crippled. Keep roots of newly-planted trees protected from frost, and if litter is objectionable, let it be covered with some of the surrounding earth.

If planting has been neglected till past the middle of the month, and is still to be done this season, let the trees remain till February or March, when the soil will again be kindly, and in order for the roots to be properly placed and covered. Nothing is more injurious to fruit-trees than placing their roots in wet heavy soil, and treading it into a puddle. We often, when planting fruit trees to be kept in narrow limits, firmly ram the soil, mixing it with stones, but never think of attempting the operation when the ground is wet. While speaking of dwarfing trees, we may mention that we have done it to a considerable extent during the last few years, and have found it profitable by bringing the trees into bearing the year after planting, and filling up spaces which would have probably remained empty. When the trees show signs of growing strong and watery, the vigorous roots are found and shortened back, and the soil is again rammed down. We have just received over a dozen of trained plums in fine condition to fill up vacant spaces between larger trees. The kinds are Victoria, Nectarine, Prince of Wales, Pond's Seedling, Goliah, and Mitchelson's Plum. These kinds can always be brought to bear freely in a short time, and the quantities to be seen in the possession of the market growers around Fulham and elsewhere are a sign that they are useful and of hardy constitution. A friend sent us a box of Cherries about the end of October, which has induced us to plant a few trees of the kind. Belle Agathe is the name given. Wasps are said to keep away from the fruit. Some practical writers strongly advise the extension system of growing fruit-trees, which is no doubt the best when circumstances will allow it; but where variety is wanted and space limited, "dwarfed" trees are necessary to give supplies. Some are in favour of grafting large Pear-trees with a variety of kinds. The practice often answers well, but the kinds chosen should be of as much the same habit as possible, as the strong would rob the weakly growers, and the latter would bear badly, and live only a short time. Grafts and cuttings of fruit-trees should have their ends placed in soil where they would not suffer from dryness. Raspberries should have all the suckers not required taken up, and the canes

trained neatly to wires or wooden rails uprightly, and about 8 inches apart, more or less according to the strength of canes. If the canes are strong, they may be allowed to stand 5 feet high or more. The kinds said to be double-bearing are only worthy of the name from liberal treatment and suitable soil—cool, moist, rich, and deep. We often get Fastolf in quantities till frost takes them : some have been hanging till lately.

Valuable plants which are in the open ground and not quite hardy should have timely attention with protecting material, as formerly advised, and if the roots can be kept rather *dry*, so much the better. Roses now require a little protection over their roots and round their collars—some nice rotten dung placed over the surface of the beds, then a little dry litter, answers well, and it can be forked in after the plants are pruned. Newly-planted Roses are most likely to suffer from severe weather. All hardy plants in frames, such as Auriculas, Pansies, Carnations, &c., require careful attention with air, light, water, and cleanliness. Water should never be given except when really necessary. Glass lights should be clean, and in good repair. Confined damp air at this season is a great enemy to all plants. Bedding-plants of all kinds are impatient of confined damp and absence of light and fresh air. Water should be given to the roots with a small-spouted pot, and no water spilt which can be avoided. The Heath tribe and many other hardwooded plants are often destroyed for want of air, and from water being given to moisten the necks of the plants, instead of their roots near the bottom of the pots. Camellia-buds often fall, and bad watering, in some shape, is often the cause. If drainage is out of order, the buds are sure to fall before they expand ; but “dribblings” of water given to the upper portion of the roots, and the principal ones lower down in the pots being allowed to suffer from drought, is a very general cause of the flower-buds dropping. When they come into bloom, weak manure-water may be given liberally. A number of very old plants here have been improved much of late years by our taking the hint from a young neighbour, that manure-water supplied throughout the whole of the year to the starved roots would improve them, and so it has unmistakably. Formerly, fresh surfacings of sheep-dung were given twice yearly, and manure-water allowed only at the flowering and growing season. Large tubs and good soil are what they really want. There are plenty of cut flowers had from October to April. Camellia-roots in plenty of rich soil would be ruined with much manure-water. Soot and sheep-dung, well mixed, make excellent manure-water, and it should be given clear and weak. Well-washed foliage is of great importance, and the same applies to Orange-trees.

M. T.

A PLEA FOR THE PENTSTEMON.

As a pleasant, easy-to-cultivate, free-flowering, joy-giving, summer-blooming plant, give me the Pentstemon. I have a posy of them before me now,—pretty, glistening, varicoloured flowers, the produce of the side-shoots of my plants, that have unfolded their flowers despite, and apparently regardless of, the frost: they and the Chrysanthemums, with an occasional tea-scented Rose on a wall, are all I now have left me as a bequest of summer.

If Messrs Downie, Laird, & Laing had done nothing else in the way of the improvement of florists' flowers than the Pentstemon, they would have deserved well of the lovers of flowers. They took the Pentstemon in hand some years ago, and year by year they give us a batch of new varieties as beautiful as they are varied. At Edinburgh, as in London, they raise batches of seedlings; and they alone of florists in the United Kingdom have taken this flower in hand and brought it up to its present high pitch of excellence. This at least is certain, that, as far as my own knowledge can be trusted, this is the only firm that annually furnishes a batch of new flowers.

Despite its beauty, freedom of bloom, and the ease with which it is brought to a high state of perfection, it is surprising that the Pentstemon is so little grown. Amateur cultivators of gardens cannot be aware of the beauty and usefulness of this plant, or they would grow it. The Pentstemon ought to be grown; the Pentstemon deserves to be grown. I began a few years ago by obtaining a batch of plants from Messrs Downie, Laird, & Laing in the early spring, and year by year I get a few more; but as I obtain, I also discard, by weeding out varieties that I think surpassed by others that have put in appearance at a later date. But I don't destroy the discarded plants. When the time comes to do this, I turn floricultural almsgiver, and make a present of some of them to the poor cottagers that reside near me; and now many a cottage garden has an eruption of Pentstemon flowers during the summer. They are carefully tended, and treasured as sacredly as some cultivator of Orchids does a magnificent new *Oncidium* or a splendid *Dendrobium*. I don't deprive Messrs Downie & Co., or any other nurserymen, of a single order, but who shall estimate the value of the gratification the culture of these flowers affords these poor cottagers?

"To perpetuate the named kinds," states a modern writer, "the plants must be propagated from cuttings, and it is best to resort to this practice annually, which will allow of the destruction of all the old plants as soon as the bloom is over, and sufficient cuttings have been obtained. To keep old plants through the winter entails a certain

amount of trouble, for which there is no return except in the case of valuable varieties, from which it is as desirable to obtain as much stock as possible ; and in this case it is best to take them up in October, put them in large pots with plenty of drainage and poor sandy soil, and house them in a cool greenhouse or airy pit. From these, cuttings may be taken at the end of September, and again from the end of February till May ; so that if a thousand plants are wanted, and there is but one to begin with, it may be done in time to plant them all in the following May."

"As there are some mystical notions abroad as to the multiplication of Pentstemons, and some of the trade aver that they find a difficulty in propagating them, I will give to all mankind in one word a code for their management that cannot be misunderstood. That it may be remembered the better I shall print it in italics ; and if you think it scarcely worth being so distinguished, I hope you will take my word for it that you are quite incompetent to estimate the value of the code or the necessity for its publication. Well, here it is, twenty words in all, and they will be worth a £20 note to many a nurseryman who has been baffled in the multiplication of Pentstemons ; let amateurs set what value they please upon them. *Grow them, keep them, and increase them in precisely the same manner as you grow, keep, and increase shrubby Calceolarias.*"

"You will observe that as the plants go out of bloom they throw up from the base a multitude of lively green shoots. Take these off, trim away the lowest leaves, and dip them into pots filled with very sandy stuff of any loamy or peaty kind, and quite poor. Place these pots in a frame or pit ; shade them from strong sunshine ; sprinkle frequently, but never let the soil be otherwise than very moderately moist ; if nearly dry, it will be much safer than nearly wet. They will soon hold up their heads, and it will be well to expose them fully to the weather as soon as they are able to bear it, but take care not to let them be drenched with heavy rains. Keep them safe from frost all winter, and keep them also safe from damp, and for the rest you will guess how to manage. In the event of requiring large quantities, make up beds in frames, using gritty leaf-mould, loam, cocoa-nut dust, and sand in about equal proportions, and out of this mixture they will lift with fine roots next spring. Plants raised in this way may be planted out in April, and all they need is a good loamy soil and a sunny position. It will be a strange thing if they want a single drop of water the whole season, except it may be just after being planted, if the weather happens to be dry."

The excellent and pithy instructions given in these three paragraphs are so suitable for amateur cultivators that I may be excused repro-



— — — — —

vigorous-growing species, with long broad drooping leaves of a deep bronzy colour, quite distinct in character ; and *Cattleya Dominiana* *tutea*, a yellow-lipped variety of this fine *Cattleya*, good in character, and handsomely marked. Also the following, shown by Mr William Bull, *Zalacca Wagneri*, belonging to a genus of Palms found growing in marshy, swampy places in the East Indies ; this was a spring species, with irregularly pinnate leaves ; *Curculigo recurvata striata*, a fine form of this handsome plant, having a band of cream along the midrib ; and to *Licuala horrida*, belonging to a genus of elegant fan-leaved Palms of somewhat slow growth : this had its leaves divided with five or more segments, and armed with strong spines at the edges of the petioles. The same award was made to Messrs E. G. Henderson and Son, for *Mohria thurifraga* var. *achilleefolia*, a beautiful greenhouse Fern ; also for a good winter-flowering Carnation named *Vulcan*, of a good hue of orange scarlet, and excellent shape. Messrs W. Cutbush and Son also received a first-class certificate for *Aucuba japonica* *fœmina*, var. *aurea maculata*, a handsomely variegated form, boldly marked, and of a compact habit.

Some new *Chrysanthemums* were staged, mainly of the Japanese section. These came from Messrs E. G. Henderson and Son, and Mr William Bull, who seem to have succeeded to the work laid aside by Mr John Salter. The former received first-class certificates for *Bismark*, dull brownish-orange, the florets broad, the flowers large and full ; and *Erecta superba*, rosy-crimson, the florets stout and spear-shaped, and very showy. Mr Bull had the same award for *Jane Salter*, with large pink and white flowers, of great size and substance, and broad ribbon-like florets, belonging to the Japanese section ; also for *Renown*, an incurved large-flowering variety, of a brownish orange colour. Mr Henry Eckford, of Coleshill Gardens, received a second-class certificate for a fine orange scarlet Zonal *Pelargonium*, with immense trusses of bloom.


R. D.



THE WINTER GREENHOUSE.

IN the successful management of plant-houses nothing is so necessary as courage — courage to avoid worthless varieties, courage to throw inferior plants away, and courage to give those which are retained room sufficient to develop their proportions in a proper manner. Nothing is more common in arranging the plant-houses at this season, than for the best to be staged first, giving each fair breathing-space, leaving the inferior specimens until the last. Then it is that courage is required to throw them away, instead of crowding them into the house, to the certain injury of better things. But, oh no ! This is deliciously sweet ; that will have a few flowers about Christmas ; and a third belonged to my dear

Somebody, and must be kept. Thus the dying are crowded among their more healthy brethren, each is deprived of the space necessary for existence, and all become more or less unhealthy. This is in plain English the secret of the failures of three-fourths of the gardeners in the country, practical as well as amateur. They convert their plant-houses comparatively into mere Black Holes of Calcutta, where plants are crowded together until the weaker ones become fairly suffocated. Of this we require no stronger evidence than the sight of the long, lean, lanky things which crowd many plant-houses in the country, and which when taken out are too weak and attenuated to stand alone. To regard such things as plants in the proper cultural sense of the word requires a stretch of imagination and credulity only to be attained by the profoundly ignorant. Our rule, directly a plant becomes unsightly in itself, is to commit it to the rubbish heap ; flowers at the cost of an unsightly plant have no charm for us. The first consideration before removing plants into their winter quarters is to take care that those quarters are thoroughly cleansed, the glass and woodwork washed with soap and water—the latter painted if necessary—and the stone or brick work washed with hot lime, to which a handful or two, according to the size of the house, of sulphur may be added. The advantage of this washing is, first, the routing or destruction of insects and their ova ; secondly, more light ; and thirdly, as the consequence of cleanliness, a sweet and wholesome atmosphere. This cleanliness must extend to the plants and the pots which they are growing in. The latter must be divested of every particle of dirt by means of the scrubbing-brush, and, if necessary, sand. Sometimes pots, if not properly baked, have a soddened, heavy appearance, quickly become green, and in these the soil dries but slowly. A plant so situated may be compared to one growing in ill-drained land ; the water does not pass away with sufficient rapidity, and consequently there is not that free circulation of air through the soil which is indispensable to perfect growth. Such pots should always be removed—in fact, destroyed—and be replaced by clean pots of the proper size. At the same time clear any wet soil from the surface of the pots, not necessarily digging down so as to disturb the roots, but just taking away that surface-skin upon which confervæ or other water weeds may have collected. Always replace the soil with compost of the same quality, and do not, because you have peat at hand, use it when you ought to apply loam. At the time of surface-dressing it will be wise, should the earth in any of the pots appear soddened, to turn the plant out and wash the inside of the pot, or, what will be better, put the plant into a clean, dry pot of the same size. At the same time, make two or three holes vertically through the soil with a thin pointed stick, and, with cautious watering for a short time after the top-dressing is applied, the soil will soon regain its wonted porosity. These may appear trifling details, but it is upon such that perfect success in plant cultivation depends ; in fact, they form the main portion of that cleanliness without which perfect success is impossible. If you visit the establishments of any of our great plant growers, as Baines, Cole, Ward, Turner, Williams, Paul, &c. &c., you will find their plants and plant-houses as clean as a drawing-room and its furniture, with persons washing the leaves of the plants, and removing every speck of dirt with as much care as it would be removed from the most beautiful painting or piece of statuary. This may be called the refinement of cultivation, but it never yet has been carried too far. Plants live by a respiratory process, just the same as animals ; they are influenced by good or injured by bad air, precisely in the same manner. What Professor Tyndall regards as the dust of the world, or the “stirabout” of our atmosphere, chokes the breathing pores in the plant just as it does ours ; and if they are not washed, the plants are affected just as we should be under the same circumstances—their natural



economy is disturbed, and they suffer accordingly. Thus we find that smooth and rather large leaved plants—Planes, Aucubas, Camellias, Myrtles, Indiarubber, and the like—always succeed better in the smoke of towns than the small-leaved plants, as the Coniferæ, Heaths, and woolly-leaved Pelargoniums, Cinerarias, &c., as these collect the dust and hold it, rain only tending to increase its tenacity; while upon the smooth-leaved plant every shower washes it away. This is the simple history of the natural condition of foliage to resist the injurious consequences of a bad atmosphere. Last year, from November until the following spring, we had in our sitting-room a plant of the beautiful-leaved subject *Dracæna ferrea terminalis*, which, washed twice or thrice a week, resisted the evil effects of a gas-poisoned atmosphere, and looked well at the last. During the same time scores of Primulas, Cinerarias, Violets, and Mignonette, perished in the same place. Having thus far explained the reasons why plant-houses should be kept perfectly clean, we will only remark that, before large plants be taken into their winter habitation, it would be well that each should be laid upon its side and thoroughly washed by means of the syringe or garden engine; and when we say washed, we do not mean merely sprinkled, but the water applied with such force as to wash the foliage thoroughly clean. For this purpose it will be best to lay the plants upon a clean pavement, or, if that cannot be had, then lay a clean mat for them to rest upon. Apply the water with full force to the stem of each plant, and in that manner the pores will be opened, and the health be materially improved. The plants being cleaned, there is a point or two to be considered in their arrangement. Some in the greenhouse, for example, such as Heaths, Epacris, and Acacias, will bear any amount of exposure, while to Tropæolums, Boronias, Leschenaultias, Gompholobiums, a cold draught is almost certain death. Hence in arranging the house it will always be best to place the last-named section in the warmest part, where they will get a free circulation of air without a cutting draught. Then, again, in the ordinary greenhouse you have hard-wooded as well as soft-wooded plants to accommodate. The latter will generally be found the most susceptible to cold, and must be provided for accordingly. The fact is, the more hardily plants are treated from this time the less likely will they be to sustain injury through the winter; and hence, observing the rules we have laid down, it will be manifest that, secured from frost and the cold draughts we have spoken of, the more air a greenhouse receives the better will it be for the plants. Never apply a fire until it is necessary to exclude frost, and then use no more than may be requisite to maintain the desired temperature.

W. P. A.



GARDEN RECORDS.

NO. XII.

MESSRS STANDISH & CO., THE ROYAL NURSERIES, ASCOT,
BERKSHIRE.

HERE, in what must have appeared at the time to be one of the most uninviting spots to be found in the whole county of Berkshire, Mr John Standish set about the formation of a new nursery, when, a few years ago, he dissolved his business partnership with Mr Charles Noble of Bagshot. The nursery at Ascot lies on the west side of the rising-ground on which is situated the celebrated racecourse at Ascot, and is only divided from the Swinley Course by

a highroad, and includes something like 80 acres of what was once wild forest-ground. Mr Standish has already broken up a large piece of land and planted it; he has also erected a great quantity of plant and propagating houses, &c., and has many acres yet in reserve that can be broken up as occasion requires. The nursery contains many features of interest, but lovers of hardy ornamental trees especially can revel here amid many varied and beautiful forms, among which newly-introduced Japanese plants are numerous included. The South-Western Railway from London to Reading has a station close behind the grand stand at Ascot, and a short cut across the course—a very pleasant spot in summer-time, commanding fine views of the surrounding country—soon brings the visitor to the nursery. At the top of it Mr Standish resides; from this point one looks away in the direction of Windsor, and sees the nursery-grounds stretching along for a considerable distance in that direction, with the large area of glass erections set down almost at its furthest point. The soil varies somewhat: on the upper ground it is a sandy loam, in depth from 30 to 40 feet, well suited to the growth of fruit-trees, ornamental shrubs, &c.; but on the lower ground, near to which are situated the Royal kennels, it is a peaty bog resting on clay, well suited to the culture of Rhododendrons. At the depth of 6 feet there is a plentiful supply of water.

It is impossible to attempt a regularly-detailed account of what was seen here on the occasion of a visit early in September; rather, there can only be set down certain features of more than usual interest, by way of indicating what can be seen here by any one interested in horticultural pursuits. Close by the dwelling-house was a group of seedling Hollies from 7 to 8 feet in height, raised five years ago from a cross made between *Ilex Balearica* and *I. Shepherdii*. The leaves of *I. Balearica* are of a pale-green hue, but the leaves of the seedlings were nearly all dark, and they make rapid vigorous growth, and appear to be exceedingly hardy. Mr Standish stated that some of them had made a growth of 5 feet in one season; also that he had raised some 60,000 of these seedling Hollies. *Thuja dolabrata* was doing remarkably well on a raised bank, somewhat steep in construction, and on which the sun acts with considerable power when shining brightly. It seems to like a position where its roots can run away from it freely, and there it succeeds best. One can imagine the beauty of this splendid coniferous tree as seen by Mr Fortune in Japan, growing like a huge *Selaginella*, some 80 feet in height. *Retinospora obtusa* appears one of the finest of all hardy plants for the country; it is if anything hardier than the common Yew, while it is not a formal-growing tree, but has a nice spreading growth. *R. obtusa Keteleeri* resembles *obtusa*, but is prettily variegated with cream, and very handsome, and even showy. *Lygustrum coriaceum* is one of the most distinct of all the species, being quite a shrub, and of very compact habit. Having thick and glossy leaves, it looks like an invaluable dwarf-growing hardy shrub for the outsides of windows in London. This was edged with that very useful hardy variegated plant *Euonymus radicans variegata*, the last being much used at Ascot as a margin for large beds. Another good plant is *Retinospora filifera*, which has been pronounced to be one of the most beautiful weeping trees ever seen. The late Mr John Gould Veitch has described how he saw this growing to a height of 50 feet in Japan—a sight to be envied. Equally valuable is *Juniperus Japonica albo variegata*, a veritable king among Junipers, growing about the size and form of a Red Cedar or *Juniperus Chinensis*, but even closer in habit; the foliage of a glaucous green and white. Never sickly or poor-looking, it is always thick and fully dressed all the year round, and is a great acquisition to the winter-garden. *Picea nobilis robusta* is a very good form of this fine

coniferous plant, and quite distinct; it has larger leaves, and is more glaucous in character than the form usually seen in our gardens. *Cryptomeria elegans* is also a fine hardy conifer from Japan, and has proved thoroughly hardy even in the interior of Scotland; during winter the foliage turns to a lively reddish-brown, while it is of a very elegant and dense habit. *Cordolyme Australis* was doing remarkably well, though occupying a position fully exposed to the east wind, and stands out all the winter. It has stood 20 degrees of frost without sustaining any injury. *Abies grandis* is a very beautiful tree when obtained in its true form, and should be in every collection of hardy plants. *A. Japonica*, thought to be a new form of *A. obovata*, is a very distinct species, the leaves being of a beautiful glaucous green, the growth very rapid, and the young shoots have the appearance of being almost transparent. It came from the Altai Mountains of Siberia. *A. Orientalis* is a handsome plant also, and can be highly commended. *Raphiolepis ovata* is a very fine hardy Evergreen; its white flowers are freely produced during the end of May and beginning of June, after which it becomes covered with purple-black berries.

In one part of the nursery was a plantation of a very fine ornamental-leaved Walnut from China; the leaves are compound, the component parts taking the form of the Ash leaf—one of these measured 42 inches in length. It is just as hardy as the common Walnut, and has been called provisionally *Juglans macrophylla*. It bears somewhat small fruit. This species was sent home by Mr Robert Fortune from North China, and were it evergreen it would be invaluable. It is a plant well worth looking after. Close by was a piece of variegated Hollies, about 7000 in number, of all the leading kinds. Many of these were becoming finely coloured, appearing to like the exposure to which they are subjected. One of the most distinct is Perry's Weeping Silver. This was growing, as it should grow, in a standard form in belts of shrubberies by the principal roadways, and formed a very elegant and handsome object. It should be worked high upon the stock, to allow ample space for the development of its elegant pendulous growth, especially as it is the fastest-growing of all the variegated Hollies.

How well the Golden Yew stands the sun was effectually demonstrated here; and the moral drawn was, that it should on no account be planted in the shade. The plants of the Ascot Golden Irish, a form raised from seed, were beautifully tinted with gold. This retains its hue even in a sandy soil, but the striped kinds do not keep their colour well here at Ascot.

Mr Standish firmly believes in the undoubted beauty of Paul's new crimson Thorn, as he is working it extensively. He finds it does better budded than when grafted, and recommends it accordingly.

In the matter of *Euonymuses* Mr Standish is especially rich. Among newer forms were—*E. latifolius argenteus*, in fine character; a great lot of it had been worked as standards; it is a fine thing, when growing in this way, to stand about among darker-leaved shrubs, as the bright-looking heads of the *Euonymus* gives a life to them. *E. radicans latifolia variegata* is very distinct from the ordinary form of *E. radicans variegata*, and is very good also. *E. latifolius albo-variegatus* is a most exquisite shrub, having the whitest variegation of all the large-leaved kinds; it is perfectly hardy, having withstood 40 degrees of frost without sustaining the slightest injury. The Japanese *Skimmia oblata* is well worthy of notice, being covered with a profusion of fine red berries. *Cupressus Nutkanensis alba* of Loudon has a very handsome variegation, and was raised from seed by Mr Standish. Here, too, was the fine *Viburnum Sieboldii*, said by Siebold to stand out in Holland throughout the year: if it should prove hardy in this country, Mr Standish thinks it will be one of the finest evergreens we have. *Aucubas* are a

wonderful feature at Ascot ; Mr Standish goes into them very extensively indeed. There was a large quantity worked as standards, in which form they are invaluable for winter decoration, and were showing berries in great profusion ; they are also suitable for terraces and conservatories. The first male plant of *Aucuba Japonica* was imported from Japan by Mr Standish, who was enabled therefrom to exhibit the first specimen bearing berries which had been produced in England, or even in Europe. These plants are destined to play a very prominent part in the adornment of gardens, as nothing can be more beautiful as Evergreens than they, with their dark glossy green leaves, bearing every sort of variegation, from the large yellow blotch down to the very smallest speck, which renders them quite distinct. It has now been proved that the fertilising properties of one male plant of good size are sufficient, by the aid of insects, for a space of 100 yards square.

Passing now into the orchard, some of De Jonghe's seedling Apples met our view. One of them bore an enormous quantity of small red fruits ; another was smaller in size, with the branches of the tree literally breaking down under its load of fruit ; another was not so red, but a fine Apple. Unfortunately, there was reason to fear any identification of these fruits could not now be made. Lord Derby is a very fine sauce Apple. New Hawthornden is a fine culinary Apple also, and succeeds Lord Suffield. Mr Standish has also raised new Peaches, and with considerable success. Two especially have been mentioned with great favour—viz., the Early Ascot and the Marquis of Downshire. These were raised from the Pitmaston Orange and Violette Hative Nectarines, fertilised by the Noblesse and Barrington Peaches. Twenty seedlings were raised, and although the Nectarines were in every instance the seed-parents, but one of the twenty seedlings proved a Nectarine. Both these new Peaches are wonderfully healthy and vigorous growers. They, together with a number of older kinds, were planted out on a piece of ground, and the marked vigour of the new varieties was clearly perceptible. The Early Ascot ripens in August, the Marquis of Downshire two or three weeks later. The former is highly commended, and our own experience goes to confirm its good qualities.

In some parts of the grounds were beds of *Lilium Tigrinum Fortunei*, which is darker in colour than the old variety, and has larger umbels of flowers.

Seedling Rhododendrons are a marvellous feature at the Ascot nursery. The seed is sown in January in pans ; when the plants are large enough they are pricked out in boxes, and planted out thickly in the month of August, in beds about 2½ feet wide, between lines of *Arborvitæ*, running from the south to the north, about 8 feet apart. Across the beds run at intervals other lines of *Arborvitæ*, about 6 feet apart. The Rhododendrons are three times transplanted ; by doing this they are encouraged to make roots, and form nice bottoms to the plants. Mr Standish has also succeeded in getting some nice breaks in the way of seedling Rhododendrons. Amongst the various shades of *R. Catawbiense* raised more than forty years ago, there were some approaching white in colour, such as *album*, *elegantissimum*, *delicatissimum*, and others. About 25 years ago Mr Standish crossed some of these with *R. ponticum* and other spotted kinds, which produced *R. Minnie*, a late-blooming kind, and a fine batch of seedling white varieties. About ten years ago, Mr Standish used *R. Boddartsianum*, *R. cinnamomeum*, and *R. Cunninghami*, and crossed them with *R. Minnie*. Those named have flowers much spotted, and Mr Standish's aim was to get some late-blooming white varieties with spots. The result more than exceeded his expectations, for not only did Mr Standish get plants that would flower all through June, bearing flowers spotted almost black, chocolate, red, maroon, and various

other colours, but also red, cerise, and chocolate blotches on a pure white ground, as well defined as those on a show *Pelargonium*. A very beautiful variety that flowered last June has been named *R. Baronness Isabelle Taintegnies*, and has flowers with the blotch so apparent that it can be detected with the naked eye some distance away. Another interesting cross has been made by taking *R. Blandyanum* and impregnating it with *R. Thompsoni*, one of the Sikkim kinds; the flowers of this are all pendulous. Yet, singular to state, some of the hybrids so obtained are larger in size than *R. Blandyanum*;—for instance, the *Ascot Brilliant*, which has flowers of the most intense shining blood colour. He has also flowered some very fine reds raised from *R. Blandyanum* crossed with *Minnie*, and *R. Johnsonii* crossed with the same, five years ago. Mr Standish has also crossed *R. Aucklandii* with some of the late white-flowering kinds, and has plants at the present time from 12 to 15 inches in height, and he hopes to flower some of them in a couple of years from this time. In the matter of foliage they are as near as possible between the two. Mr Standish has also tried to cross some of the smaller flowering kinds with *R. Aucklandii*, but to no purpose; and he assigns this reason for his failure,—that the pollen was too large for the tubes of the pistils of the smaller ones. It is mentioned by Mr Standish as a curious fact, that in the spring, when there are any of the early-blooming kinds in flower, and there happens to be frost, the nearer the plants stand in affinity to *R. arborea*, the more tender are the flowers; while, on the other hand, the nearer the affinity to *R. Caucasicum*, the better do the plants withstand frost.

But we have lingered too long in the open grounds, for there are remarkable features within the houses.

The production of cut flowers for the aristocratic neighbourhoods of Belgravia, South Kensington, and elsewhere, is a prime part of the Ascot business. Mr Standish has a shop at Knightsbridge, and commands a wonderful sale for fruits, cut flowers, &c. There are on this nursery three houses of considerable size for the growth of forced Roses, which are in considerable demand. To one red Rose, twenty-five yellow ones are planted. Why, 3000 yellow Roses per week are sent to London, during April and May, in the height of the London season! *Mignonette* is largely grown, both planted out in cold frames and in pits; so are intermediate Stocks and Tree Carnations. The biggest house for Roses is a large span-roofed building. Here was planted out on the 25th of May 1868 a *Maréchal Niel* Rose, now 70 feet in length by 8 and 9 feet in width; this was on its own roots, and produces immense quantities of flowers. In one house we saw a new *Ceanothus*, named *Gloire de Versailles*, with very pale blue flowers; a strong plant will produce a panicle of blossoms a foot across. Mr Standish has a large stock of *Daphne elegantissima*, a variegated form of *D. Indica*, which was awarded a first-class certificate of merit by the Royal Horticultural Society a few weeks ago; it is a capital variegated plant. That fine double-red *Azalea*, *Francois de Vos*, was also being largely propagated.

In one of the early vineries was a pot of *Gladiolus cruentus*, from Central Africa, with orange-scarlet flowers blotched with white. This is a fine and showy pot plant, that remains in bloom for ten weeks together. In a stove-house, and in cooler houses, were Italian Tuberose in various stages of growth. They are potted in February, and kept cool and dry by means of top air in a bottom heat of 90°; then they are removed into a house in order to push them on into bloom. These are very useful for cut flowers; and among other plants cultivated for the same purpose was a species of *Oldenlandia*, with pretty white sprays—a capital thing for wedding bouquets—that flowers all the year: *Bouvar-*

dias, of variety—these are cut back in July, and come into bloom in September. There were also large plants of *B. Huttoniana*; this blooms very freely, and has the brightest scarlet flowers. *Oncidium flexuosum* is also largely grown for button-holes, and is always in flower; *Jasminum Sambac* and *Sambac florepleno* were just being placed in a stove to throw them into flower; *Azalea narcissiflora*, with double-white flowers, very useful, and many other things; there were also a nice lot of *Camellias* planted out to yield a supply of cut flowers. In a conservatory were huge bushes of *Gardenia florida intermedia*, soon to be placed in a stove, and brought into flower at Christmas.

No one could think of visiting Ascot without making inquiries about the Royal Ascot Grape. We saw a house of it, and came away from it with a deep conviction on our mind that it is a Grape worthy of general cultivation. There was a commodious span-roofed house, containing forty-four Vines, which were planted out in the month of May 1868, now covered with capital bunches of full, plump, fine-coloured berries, of a fine brisk rich acid flavour. The best rod had ten nice bunches, and the weight of Grapes in the house averaged about 4 cwt. Its great value lies in that it bears and sets freely, colours well, and is easily managed. Pre-eminently does it seem to be an amateur's Grape, one that from all appearance will grow and produce good fruit under some of the many disadvantages amateur Grape-cultivators have to contend with. We also saw what appeared to be a fine new Grape, which had been named Dr Hogg, in compliment to that well-known Pomologist. This had been obtained from *Chasselas musqué* crossed with *Long Noir D'Espagne*. The berries were round, finely coloured, and well flavoured; and not the least among its recommendations is this—that it is a fine-hanging Grape, keeping longer than *Lady Downes*. Mr Standish has a high opinion of the *Madresfield Court* black Grape, and is growing it largely.

Coming to the open ground again, we noticed a group of plants of the pretty *Bouvardia triphylla*, with its charming orange-scarlet flowers, blooming very freely indeed. This is said to be hardy; it is certain that it has stood out of doors during the winter at Langport, in Somerset, without any protection. Some seedling Zonal *Pelargoniums* were very fine, Mr Standish having long been known for the value of the new flowers he has raised. Some recently-named comprised *Harry Turner*, very rich fiery crimson, a splendid hue of colour; flowers large and of the finest form, and dark zonate foliage: *Henry King*, rich deep scarlet, very fine white eye, a flower of fine quality, slightly zonate foliage: and *Richard Dean*, very bright scarlet, with white eye; a large and greatly-improved *Lord Derby*. *Jean Sisley* and *Lord Derby* are largely grown by Mr Standish for flowering during the winter.

It seems a curious descent from Grapes and Roses to Onions, and yet there were growing in one part of the nursery some splendid examples of *Tripoli Onions* of uncommon size and high quality. The seed was sown in a little heat under glass in March, the plants pricked out in a cold frame as soon as ready, and transplanted to the open ground at the end of April.

With this notice we complete our Garden Records for the year 1870, in the full belief that they have been very acceptable to the readers of the 'Gardener.'

R. D.



GARDENERS AND GARDENING IN AMERICA.

MR WILLIAM ROBINSON, the author of 'The Parks, Promenades, and Gardens of Paris,' is at present making a tour through the United States of America. He has written home some communications of a very interesting character, and the following extract from one of them will not fail to interest many of our readers :—

“No doubt many among the least fortunate gardeners in England look over here with curious eyes, and may perhaps be interested in a few remarks on the prospects of gardeners in this country. Of course I cannot pretend to know as much about their chances here as persons who have been much longer in the country, but I have perhaps seen as much of the gardening of the country since coming here, as many who have been for years rooted in the spot. Of the capacities of the country for gardening I have no manner of doubt, notwithstanding the complaints of many who have to do with it. To find a country or climate without drawbacks, is not given to gardening men. In England, we often complain of our cloudy skies, but here a brighter climate brings a murderous host of insects, and the gardener finds a new source of grief and grumbling. But when I reflect that in this country most things can be grown that we grow in England, and that, on the other hand, not a few important products that with us require a high artificial heat (Melons, for example) may be grown to perfection by merely sowing them in the open air like common annuals, I have no hesitation in saying that eventually this country will be found much more favourable for gardening than our own. But to the professional gardener other things are of vital importance. Of what avail to him are fertile soils, and fine and varied climates, if employers are not to be had? Now, in America there is a very large class who make money freely—make it sometimes so rapidly as to astonish even Manchester—but it is a fact that a very small proportion of these take anything like the interest in gardens that corresponding classes do in England. Sundry reasons might be given for this. Perhaps a good many of the new-rich are not sufficiently refined ; perhaps all the money which they can devote to æsthetic purposes goes for the absurdly large rings which decorate the fingers of themselves and their wives ; perhaps the amount of *Nicotiana Virginica* smoked and chewed may remove the necessity for any other joys which the vegetable kingdom can afford—but there is little need to inquire. There are in America numbers of persons of highly-refined taste, who delight in country and suburban life, and among these some have good gardens, and are most agreeable masters ; but let it not be supposed that even with these the life of a gardener is anything like what it is in England. There is probably not a place in the country where a gardener has the same standing or the same comforts which fall to the lot of the first-class gardener in England. Labour is so very expensive that no man can afford to keep a bevy of workmen ; so manual labour from the head-gardener is indispensable. Thus places for what are called first-class gardeners in England may be said not to exist ! I have met young men who had been foremen in good places in England, and who had got as good places as could be obtained here, who considered they had made a mistake in leaving the old country. The rule here is, a small place with one man or two to help ; and the master is usually master of the situation in the garden, as well as in other departments, which we know is not always the case in England. There he generally orders his own seeds and plants, which will at once suggest a difference. Then, again, the pay, even in the best places, does not leave a gardener better if so well off as he would be in England. But healthy, hardy, young gardeners ought to be able to adapt themselves to the wants of a new

country, and, if so, they will find sundry openings not obtainable in the old country. There is not by any means so great an improvement in the pay of the gardener as of the labourer. Men satisfied with second or third class places, or single-handed ones, may find their expectations answered—others not. If, however, there is less high gardening here, there are more chances in other ways. The nursery business is fairly profitable, and in nurseries young men may find good places from time to time; and the cut-flower business—that is to say, the growing of plants for the flowers they yield in winter—is still more so. The best course of all for a young gardener is, after he has succeeded in saving a few hundred dollars, to try and secure some ground of his own—not difficult in this country—and establish himself as a nurseryman, grower of cut flowers, or market-gardener. The two first may be, and often are, combined. The difficulty is, of course, to get the means to start with, but the well-to-do florists round the large cities came without a dozen dollars, and the coming men can win with the same weight. But all should understand that success must be preceded by years of patient labour; therefore it should be attempted by no man who is not young. Unless engaged for good situations previously, it is folly for gardeners past their youthful prime to come here. Botanic gardens may be said not to exist in this country, so there are but few chances for the budding curator. The finest gardens in the country are the great public parks, such as the Central Park at New York, and Fairmount Park at Philadelphia,—vast and beautifully diversified pieces of ground, happily not yet overdone with flower-beds. But parks of this kind are of necessity so few that they are scarcely worth alluding to in this connection. In distant parts of this country, as most people know, grants of land are to be had for the asking, or for a very low price; but it need hardly be added that to commence life on such, some little capital is required, but not more than could be accumulated after a few years' work here. But the hardships, loneliness, and inconvenience of out-settlement life are not such as should be willingly encountered by any but the hardy, vigorous, and young. Life in the backwoods or back-prairies may seem very nice in books, but it means hard work and scant reward for a good many years. It is the second generation that reaps the benefit of it. Yet with all its difficulties numbers of young men from the long-settled and populous New England States go out west, and say they like their lot there very well. Sometimes, too, town-bred men go forth to break the virgin sod, and the young gardeners of England and Scotland ought to be able to compete with any of these. The one charm among all the difficulties encountered here is, that they lead to independence at last; but that life may not be thrown away in the attempt, it is necessary to begin young. Briefly, then, the advice to gardeners thinking of coming here should be: If you have a good or even a middling place at home, or even a good prospect, be content, and make the most of things as you find them around you. But if you are young and strong, and poor and friendless, come and fear not, for no matter what you turn your hand to here, you are almost certain to arrive at a better end than the many poor gardeners at home, who are as dependent for their precarious living at the end of a long life of hard work as at its commencement."



HORTICULTURAL EXHIBITIONS.

ROYAL HORTICULTURAL SOCIETY, SOUTH KENSINGTON, Nov. 2.—On this occasion prizes were offered for 6 large flowering Chrysanthemums, the first prize being awarded to Mr Rowe, gardener to Mr Lewis, Rochampton, for Lady Talfourd ; Mrs G. Rundle, a lovely white flower ; Dr Sharpe, a crimson-flowered reflexed kind, well adapted for pot-culture ; Marshal Duroc, Prince of Wales, and Lady Hardinge. These were tied out to that formal shape now so universally condemned, because so destructive of all natural beauty. Mr James, gardener to W. F. Watson, Esq., Isleworth, was second with some upright-grown plants, not quite in flower, yet well bloomed. Mr Forsyth, Brunswick Nursery, Stoke Newington, was third. The best 6 Pomponé varieties came also from Mr Rowe, and comprised Antonius, Queen of Anemones, Calliope, Mons. Astic, and the golden and white forms of Cedo Nulli.

With 24 cut blooms of large-flowering varieties Mr Rowe was also first ; Mr Berry, also of Rochampton, being second ; and Mr James, of Isleworth, third. The finest and most striking flowers included Empress of India, White Globe, Novelty, Queen of England, Jardin des Plantes, Lady Slade, Prince Alfred, and Mrs G. Rundle.

An attempt was made to bring together berried plants for decorative purposes, and prizes were offered for groups of nine ; but only one collection was staged, and that a very poor one, the only redeeming feature being some pretty well-grown plants of hybrid Solanums : however, the judges gave the group the first prize.

The meeting was greatly helped by a fine group of flowering Orchids, sent from Lord Londesborough's, at Tadcaster. In it was a splendid specimen of *Vanda cœrulea* ; also *Oncidium macranthum*, with a spike of six lovely flowers ; *O. crispum*, with some fine blossoms ; *O. Rogersii*, with some very fine bright-yellow flowers ; *Pleione Wallichii*, a nice plant, beautifully flowered ; also *P. lagenaria* ; an example of *Zygopetalum crinitum*, with two spikes ; nice flowering-plants of the chaste *Odontoglossum Alexandræ* ; *Cattleya Harrisonii*, with eight spikes of rosy-coloured flowers ; *C. maxima*, a magnificent species, with five richly-coloured flowers ; and the charming *Phalœnopsis Lowii*, with one spike, on which were seven of its beautiful rose and mauve coloured flowers. Messrs Veitch & Sons, Bull, and others, also contributed collections of flowering and other plants.

In the fruit department some interest was awakened owing to Messrs J. & C. Lee having offered a prize of £5 for the best three bunches of Madresfield Court Black Muscat Grapes. But two collections were staged, one of a very poor character, the other pretty good examples, but, to our thinking, not nearly so well done as what we have seen at Chiswick under the cultivation of Mr H. F. Barron. This came from Mr Z. Stevens, gardener to the Duke of Sutherland at Trentham, to whom the prize was awarded. The best six dishes of dessert Pears came from Mr Stephenson, Leigh Hall Gardens, Essex, who had Duchesse d'Angoulême, Glou Morceau, Passe Colmar, Marie Louise, Grand Soleil, and Beurré Diel. The second prize went to Mr Miles of Wycombe Abbey Gardens, who had Huyshe's Victoria, Van Mons Leon le Clerc, Beurré Bosc, Aethorpe Crassane, Beurré Diel, and Marie Louise. There were several other collections, and altogether a very nice show of Pears was made.

In the way of new fruits, a splendid Apple was sent from Southampton by Mr A. Dene, under the name of Beauty of Hants : in flavour and texture it some-

what resembles the Blenheim Orange, but was considerably larger, more conical in shape, and very highly coloured. It was much admired. Mr Jennings, Shepston-on-Stour, sent specimens of that pretty little Apple known as the Fairy, as yet too sour for use.

A first-class certificate was awarded to Messrs Veitch & Sons for a Cauliflower of large size and coarse-looking, named the Giant Autumn; said to come into use when others are over.

The prizes for the best collection of Potatoes brought together two collections, in which coarseness rather than quality predominated:—so much have we yet to learn regarding this valuable esculent. The collections contained nothing worthy of special remark.



REVIEWS.

CHOICE STOVE AND GREENHOUSE ORNAMENTAL-LEAVED PLANTS, comprising descriptions of upwards of eight hundred species and varieties, accompanied by instructions for their cultivation and mode of management, with illustrations. By B. S. Williams, F.R.H.S., author of the 'Orchid-Grower's Manual,' 'Choice Stove and Greenhouse Flowering Plants,' &c. London: Published and sold by the Author.

As Mr Williams designates this work Vol. II., it must be regarded as a continuation of the work published last year, entitled 'Choice Stove and Greenhouse Flowering Plants.' No better authority than Mr Williams can discourse on these plants. Summed up in these two volumes are the results of the experience of a life devoted to their culture, as well as to the introduction of many newer species and varieties. Any one who has walked through the Victoria Nursery, Holloway, must have been struck with the wonderful wealth of foliated and ornamental-leaved plants to be seen there; and these have been arranged in groups by the author, then masses in divisions, as a general would an army of soldiers, and passed in review, and finally arranged in the book before us, in a compass of 329 pages, abundantly illustrated, and abounding in valuable cultural notes.

Before we reach the notes on plants, we are treated to several pages of incidental matter extremely useful to the cultivator. There are short chapters on Plant-Houses, Greenhouses, and Conservatories, Cisterns, Glazing, and Ventilating, &c., every one of which is well worthy a careful study. The writer has decided opinions, and they are expressed clearly and forcibly. The preliminary matter being disposed of—none the less valuable in character because preliminary—we are treated to a chapter on Horticultural Exhibitions, which forms a kind of antechamber by which we pass on to the general purport of the book. This chapter is well worth extracting, though it must not be supposed we agree with the author in all the opinions therein expressed; rather we give it as showing what can be said in favour of foliated plants by one of the most successful and best-honoured cultivators of the day:—

HORTICULTURAL EXHIBITIONS.

"In this concluding chapter we propose saying a few words upon horticultural exhibitions. We have been connected with these public exhibitions for many years, and we are fully impressed with their utility and beneficial influence upon horticulture generally. A difference of opinion in this respect has

sprung up recently, and a few visionary articles have been written, which prove nothing but want of knowledge, and bad taste on the part of the writers. It is a fact beyond dispute, that horticultural societies throughout the three kingdoms have been the means of promoting the science of horticulture, and to their influence, fostering care, and encouragement, is due the introduction of the many plants which now ornament our stoves and greenhouses, as well as the open air—both of these yielding fine flowers and ornamental foliage. Such subjects as these, when brought together at an exhibition, and made to form the basis of a gorgeous display, impress the enthusiastic beholders with a love for plants, and many of our leading amateurs have assured us that these floral displays were the means of first instigating them to become horticulturists.

“Having for many years been a constant visitor at these shows, and taking an active part in these displays both at home and abroad, we have been able to judge practically of the progress these have been the means of producing on plant cultivation, and in the effective grouping of plants; also in regard to the great variety of objects brought for public competition. Being fully alive to all this, it has necessarily caused us extreme regret to see the backward tendency displayed by our Metropolitan Horticultural Societies during the present season; for just at the time when we have become fully aware of our error in devoting our whole energies to produce flowers only, to the utter neglect of plants of elegant forms and beautiful leaves, and are earnestly endeavouring to retrieve this error, and when, too, we are introducing these plants largely for the decoration of our gardens in the open air, the societies have totally withdrawn their encouragement for the production of them; and by their silence respecting them—by their not asking for plants remarkable for the beauty of their foliage to grace their exhibitions—they seem to ignore the existence of grand specimen plants, whether ornamental in foliage or flowers. How such a state of things has originated it is difficult to say, but of this we are fully assured, that the exhibitions without these fine ornamental-leaved plants will be miserable in the extreme. What lent the great charm to the London and Paris Great International Flower-Shows, but the elegant Tree Ferns, and those of humbler growth, the noble Palms and Musas, besides the vast quantities of other ornamental-leaved plants there brought together? The various shades of green and variegated leaves formed an agreeable contrast with, and served to enhance the beauty of, the masses of bloom staged with and around them; and what would these exhibitions have been without such plants? Again, what is it that causes all visitors to plant-exhibitions upon the Continent to pronounce them finer than our own? It certainly is not their grand Heaths or New Holland Plants, for such things are not well grown by Continental cultivators; neither is it their magnificent stove-flowering plants and Azaleas, for with these we are infinitely their superiors; but it is through the quantity of Ferns, Palms, and ornamental leafage generally introduced, and which is judiciously arranged with their somewhat inferior flowering subjects. These materials being grouped for effect, the appearance produced is most enchanting, such as we have never yet equalled. This is the only reason why all reporters receive a more favourable impression abroad than at home. Yet such as these are the very plants that are to be banished, as specimens, from our flower-shows in the metropolis! Let us vainly hope that those who perpetrate such barbarisms—who thus try, as it were, to hurl horticulture back into its dark ages—may speedily see the error of their ways. They manage these things far better in the provinces; and the authorities of such centres of horticulture as Manchester, Leeds, and York, are too well aware of, and appreciate too well, the effect large ornamental-leaved plants produce, ever to think of discarding them from

their exhibitions. At the same time, they are fully as well aware that mill-operatives and mechanics are great admirers of beautiful-leaved plants as well as of flowers, and to banish either section from their great Whit-week display would not only cause widespread dissatisfaction, but would tend materially to diminish their exchequer; for it must be borne in mind that at the provincial flower-shows the working classes constitute a great portion of the visitors. Many of them are enthusiastic botanists and amateur horticulturists, and it is a rich treat to which they anxiously look forward, and one that enables them to refresh their memories and gladden their sights with the beautiful works of nature, of which, to a great extent, their daily occupation deprives them. We say, long may such societies flourish—and flourish they must and will, whilst their efforts all tend towards the education and elevation of the masses, which is the noblest aim of life.”

Our own experience teaches us that, as touching provincial horticultural exhibitions generally, the foliated plants are not only more numerous than flowering stove and greenhouse plants, but also better done, though this is no doubt owing to the fact that foliated plants are much more easily cultivated. *Ixoras*, *Allamandas*, *Clerodendrons*, *Gesneras*, *Gloxinias*, and a few others, are seen, but of New Holland plants but very few. While we quite think with Mr Williams that the managers of the Great London Horticultural Exhibitions are to be censured for the way in which some of the finest features of these shows have been lopped off, we should still like to see in country shows of second-rate excellence more of flowering greenhouse plants, *Heaths*, &c., than are usually seen there. It does seem that the rage for foliated plants, that are after all much less attractive, is gradually pushing the flowering-plants out of cultivation.

To young gardeners especially we particularly commend Mr Williams's new book. As a reference work, they will find it extremely useful; besides, every page is full of instructive matter of high value to them in learning their profession.

THE FARMERS' ALMANACK AND CALENDAR FOR 1871. By C. W. Johnson, F.R.S., and William Shaw. London: William Ridgway.

This is the thirty-first edition of this useful annual, and it is one of the cheapest and most useful shilling's worth issued at this season of the year, when annuals spring up as thickly as weeds. The gardener will find much to interest and instruct him in its pages; and the gatherer of scientific facts will get something for his storehouse of information also.



BOOKS RECEIVED.

THE GARDENER'S MAGAZINE for November.
THE FOOD JOURNAL for November.



NOTES AND QUERIES.

WOODLICE ON MUSHROOM-BEDS (T. L. A.)—Pieces of Apple placed in a little moss under an inverted flower-pot will trap the woodlice wholesale. The bait must be examined occasionally.

GARDEN-WALKS (Inquirer).—Six barrow-loads of rough material and one of fresh lime would cover a considerable space when laid out $3\frac{1}{2}$ inches in thickness, but we cannot say exactly how many square yards it would cover. See the article headed "Gardening on the Thames Embankment" for another capital mode of constructing paths.

DOUBLE GLAZING (W. N.).—We have no experience of double glazing as applied to Pine-houses; but you might make an experiment by having another set of lights made to put over the others in winter and be withdrawn in summer. Have you a proper boiler—one large enough to do its work well? A small boiler that does its work imperfectly is much more expensive than a larger one of more power and fitness. The consumption of fuel would not be so great actually in the case of the larger one.

FUCHSIAS (L. A. G.).—The following selection will suit you very well, being fine and varied, and plants could be obtained next spring at a reasonable cost: *Avalanche*, a fine pure white double-corolla'd variety, tube and sepals brilliant carmine scarlet; *Enchantress*, another very fine double white, one of the best grown; *Herald*, tube and sepals bright rose, corolla bright blue, changing to violet pink, good habit and very free; *Lizzie Hexham*, scarlet sepals, large rich plum-coloured corolla, a fine exhibition variety; *Lustre*, a lovely light variety, with a vivid crimson vermillion corolla; *Marvel*, bright carmine sepals, and a dark lavender-blue corolla, very good; *Killiecrankie*, crimson tube and sepals, rich dark plum-coloured corolla, extra fine; *Heather Bell*, white tube and sepals, lovely carmine red corolla, very pretty; *Starlight*, waxy-white tube and sepals, clear lake corolla, a charming variety; *Catherine Parr*, white tube and sepals, rich scarlet rose corolla, old, but very good; *Giant*, bright rose sepals, and immense double purple corolla, good habit, and very free; *Taglioni*, a charming light variety; *Tinted Venus*, a very novel and beautiful Fuchsia, the tube and sepals bright rose, the corolla white, tinted and feathered with violet rose; *Venus de Medici*, an old but extremely useful light variety; and *Wave of Life*, red tube and sepals, magenta corolla, shaded with purple, very good and showy. Some of the foregoing are new of the last year or two, others older. Our advice to all exhibitors of the Fuchsia is to strike cuttings yearly in August and September, and grow on the plants for exhibition the following summer. Much depends on the place to keep them in during winter, but treated in this way splendid young specimens 4 feet in height can be obtained, against which many of the old plants one usually sees at horticultural exhibitions stand no chance if intelligent judges (not always the case) are selected to make the awards.

NAME OF PLANT (A Reader).—The specimen sent was so thoroughly shrivelled that we could make nothing of it. There must have been some delay in posting the box.

PREMIER RUNNER BEAN.—I cannot but think that this new and distinct variety will prove to be a valuable acquisition to our list of Runner Beans. Whilst thoroughly differing in its character from the old Scarlet Runner, it differs also materially from the rest of other well-known Runners, inasmuch as it partakes more of the nature of a good dwarf Bean in appearance, being medium-sized in the pod and straight in shape. The flower of it is nearly white, and enjoys the faculty of being a good setter. In this respect it has proved during the past exceedingly dry summer a much more reliable friend to the gardener than even the Scarlet Runner, as in the case of the first the supply of pods was continual, whilst the latter suffered so much from the heat that the greatest pro-

portion of the blooms fell off without bearing fruit. A neighbouring gardener, to whom I gave some of the seed, and who grew it last summer, assured me that but for it he should have been quite destitute of Beans, as the other kinds, both dwarf and runner, had quite given out. The seed of it is about the size of that of a large French Bean, is reddish in colour and quite distinct in character. The plant usually grows from 5 to 6 feet in height, and as a cropper is wonderfully abundant. To market-gardeners it must be most useful, and as it is very sweet and soft to eat, must soon become a favourite with the public. I like to use moderately-high pea-sticks to stake it with, as they seem to be better adapted to its habit of growth than very long straight sticks are. I am not sure that it is yet largely in cultivation, but when it is it will prove to be one of those sterling things that have but to be known to be appreciated. A. D.

MY GARDEN IN WINTER.—Your January number gave this interesting subject, with a promise of a farther contribution in April, which has not been forthcoming. Having your volumes nicely bound for reference, I like a promise or system fairly carried out. The article on the Aster in last number is truly useful. My half-crown's worth of seed was just money, time, and labour thrown away this season; and now I shall request the seedsman, next time I apply to him, to supply me with the four sorts named. As to the diversity of opinion on the Briar and Manetti, I tried my hand this year on the latter for the first time, cutting the usual T for the reception of the bud after removing the earth from the stem with an old tooth-brush; but somehow or other the bud was eventually thrown out, and the cut looked a large wound instead. Do the buds on the Manetti require different treatment to those on the Briar as to tying or otherwise? Will A. D. give us any more contributions, as promised?—AMATEUR. [Open the earth more boldly at the roots of your Manetti stocks, and bud as low as you possibly can. It is more difficult to bud on the Manetti than on the Briar, as the place in which the bud is inserted on the Briar is more readily under command. The garden of our correspondent A. D. was so completely wrecked by the hot weather and drought that set in so unusually early, that he was prevented from giving his promised contribution. Whether he will continue to detail his experiences must depend entirely on the new editorial arrangements for the coming year, now in course of being made.—R. D.]

AUBRIETIA PURPUREA FOL. AUREA.—There is now to be seen at the Chiswick Gardens of the Royal Horticultural Society a capital golden-leaved sport from this fine old winter and spring blooming plant that seems likely to be as useful in the spring garden as the golden-feather Pyrethrum is in the summer garden. It will be a very useful companion to the pretty golden-tipped Sedum acre, or Stone Crop.

SEMPERVIVUM — (Miss Angel). — Use *S. Californicum* in conjunction with *Echeveria secunda glauca*. You will find it better than the combination you tried during the past summer.

WEEDS ON WALKS (P. A.)—Weeds on walks are often the most troublesome. Wherever a loose shingly gravel is used, or one that does not bind, hoeing and raking are permissible; but it is very undesirable in the case of walks, like those about London, which bind thoroughly, and when well made and dusted over with a little shell are the best walks known. If the traffic is not sufficient to keep them free from weeds, they must be either salted or hand-picked. Salting is the best plan, but it cannot well be applied where there are Box or other living edgings,

as of course the first heavy rains will place the roots in a medium about as congenial to their wants as if they were planted in the salt sea. If walks are well gravelled, picking them is not a very troublesome operation; but after a season or two the gravel gets infested with a myriad of small weeds. Human patience has not been made sufficiently elastic to enable us to pick out these, and therefore such must be turned over in spring, and a coating of new gravel applied. Salt may be applied to walks cut in the turf.

KALMIA LATIFOLIA.—I have two fine bushy plants of *Kalmia latifolia* that have never shown bloom since they left the nursery seven years ago. I have grown them in peat along with *Rhododendrons*, which do well with me. Can you advise me of any compost or treatment that will induce them to bloom? A reply in your December number will greatly oblige. BALLINASLOE.

[The non-blooming of *Kalmia latifolia* must, I think, be caused by a too vigorous growth—most likely the climate is very moist and genial just at the time the shoot-growth should be ripened, and instead of flower-buds being formed, the energies of the plants go to form a second wood-growth. If this be the case, a copious addition of sand to well-drained peat-earth may be made, and placed about the roots of the plants; and if they do not then set their flowers, I would further advise that they be replanted every season, reducing the balls of earth slightly: or another plan might be tried, of lifting the plants *and leaving them for a day or two upon the ground*, about the months of July and August, just as the shoots have made a few inches of growth, and show indications of the rest-period being about to commence.—CHARLES NOBLE, Sunningdale Nursery, Bagshot.]

HEATHERSIDE RIVAL CUCUMBER.—We have received from Messrs Peter Lawson & Son a new Cucumber with the above name, which appears to be as near perfection as a Cucumber can be. It grows from 18 to 24 inches long, very round and perfectly smooth, spineless, and of a dark-green colour. The rind is very thin and the seed-vessels are very small; the flesh solid yet tender, and in flavour what a Cucumber should be. The heel, often a great defect in Cucumbers, is in this variety perfect. It is a seedling from a variety known as Dean's Early Prolific, which Mr William Thomson described as "the most perfect Cucumber he had seen." Both deserve extensive cultivation, and are extremely valuable—winter kinds being so very prolific—and are equally desirable for summer work.

QUINCE JAM.—The following is an excellent method of making Quince jam, and a very simple one:—Take 12 lb. of Quinces, pared and cored; cut them into small pieces; put 12 lb. of white sugar into a preserving-pan, with about a quart of water; set the sugar and water on the fire; when they come to the boil, put the Quinces in gradually without taking off the pan; let them boil until the fruit is all soft and of a bright-red colour. Be sure to take off the scum as it rises. A little essence of lemon or cloves will improve the flavour. This jam, if properly boiled, will turn out of the jars when wanted, and may be cut with a knife.

COOKING POTATOES.—The humble art of cooking this valuable esculent may be by some held in contempt; but I hold to the opinion that it requires more than ordinary care and attention to boil a Potato well. And it is not improbable that six dishes of the same variety of Potato, if cooked by six different persons, would all present diverse features in appearance and fitness for table. So much am I impressed with this idea, that when in the course of my Potato experiences

I wish to test the table qualities of some new variety, I invariably perform the culinary operation myself, so as to be certain that the measure meted out to one kind is meted out to all alike. Presuming that my samples have been carefully scraped or peeled, I put them into a saucepan and cover them almost, but not entirely over, with water, putting in also a small lump of salt. A brisk fire must be burning in the grate, as therein lies the great secret of good cooking. With sharp boiling, the water, by the time the Potatoes are done, should be reduced one-half, and that they are done can easily be ascertained by testing with a fork. As soon as ready, the water should be strained off, and the saucepan placed on the edge of the fire, to cause the evaporation of all the remaining moisture, and in a few minutes they are ready for dishing up. If our cooks of all grades will follow this mode strictly, well-cooked Potatoes, presuming the sort is tolerable, will certainly result.

A. D.



I N D E X.

- Alyssum, culture of, 308.
 Amateur Horticulturists, another chapter for, 118.
 Amateurs, a chapter on, for Amateurs, 78—Hints for, 25, 56, 110, 156, 209, 263, 303, 357, 393, 458, 494, 548.
 Amateur's Garden, the, 131—Gardeners' Chronicle, reviewed, 92.
 Apple and Pear trees, small-bush, on pruning, 437.
 Apricot, cultivation of the, 199, 257, 300, 349.
 Arabis, culture of, 309.
 Archimedean lawn-mower, the, 228.
 Argemone, culture of, 173.
 Asters, how I grow, 491.
 Aubrietia, culture of, 311.
 Auricula, my experiences with the, 253.
 Battersea Park, account of, 31, 84.
 Bees, on the management of, 67, 102, 205.
 Berberidaceæ, culture of, 249.
 Bevois Valley Nursery, a visit to, 176.
 Blessing on an old Broome, a, 139.
 Camellia buds dropping, 91.
 Chatsworth, Grapes at, 411.
 Chelidonium, culture of, 173.
 Cherry, cultivation of the, 71, 105, 168.
 Chiswick Gardens, their proposed abandonment, 145—the Orchard-house at, 391.
 Chrysanthemum, something about the, 115.
 Colour in Tree-scenery, on, 462.
 Cottager, notes by a, 171.
 Cottagers, Horticulture for, 337.
 Covent Garden Market in April, 246.
 Crassulaceæ, the culture of, 512, 536.
 Cruciferae, culture of, 308.
 Dahlia experiences, 472—roots, the lifting and storing of, 502.
 Dancer's Market Garden, a visit to, 468.
 Ealing Park, the flower-garden at, 505.
 Eastnor Castle, the gardens of, 39, 165.
 Education of Gardeners, the, 88, 97, 216.
 Epimedium, culture of, 249.
 Farmers' Almanac, the, 568.
 Flowers and Grasses suitable for drying, notes on, 370.
 Food Journal, review of, 524.
 Foxgloves, new spotted, 362.
 Frames, on the construction of, 88.
 Frogmore Gardens, a visit to, 295.
 Fruit-trees, wall protection for, 37.
 Gardens in the Midland Counties, travelling notes on, 39, 165.
 Garden Oracle reviewed, 92.
 Garden Records—Battersea Park, 31, 84—Versailles Nursery, 128—Bevois Valley Nurseries, 176—Worton Cottage, 221—Swyncombe Park, 270—Mottisfont Abbey, 315—Paul and Son's Nurseries, 365—Gunnersby Park, 407—Dancer's Market Garden, 468—Turner's Nursery, 509—Standish and Co.'s Nurseries, 557.
 Garden-walks, 522.
 Gardeners and Gardening in America, 563.
 Gardeners' Year-book, review of, 46.
 Gesnera Zebrina, 19.
 Gladiolus, the, 30.
 Globularia, the culture of, 22.
 Gooseberry and Currant bush pruning, 138.
 Grape-growing, some random thoughts about, 150—thoughts about, 275.
 Grapes at Chatsworth, 411.
 Gunnersby Park Gardens, visit to, 407.
 Hardy fruits, cultivation of: the Plum, 8—the Cherry, 71, 105, 168—the Apricot, 199, 257, 300, 349—the Peach and Nectarine, 397, 454, 488, 540.
 Hardy herbaceous plants, notes on: Hottonia, 22—Globularia, *ib.*—Vinca, 23—Amsonia, 25—Papaveraceæ, 172—Berberidaceæ, 249—Nymphæaceæ, 251—Cruciferae, 308—Violaceæ, 402, 443—Crassulaceæ, 512, 536—a plea for, 289—notes on new, 353.
 Hibberd's Rustic Adornments, reviewed, 333.
 Hole's Book about Roses, review of, 284.
 Hollyhock, amateur cultivation of the, 6, 74.
 Hooker's Student's Flora, reviewed, 333.
 Horticultural Calendar, the, reviewed, 190.
 Horticultural Exhibitions: Liverpool Chrysanthemum, 42—Caledonian Horticultural Society, 45, 232, 379, 478—Royal Horticultural Society's, 83, 136, 188, 231, 282, 325, 423, 565—Irish Society, 229—Royal Botanic Society, 230, 324, 374, 378—Glasgow, 231—Crystal Palace, 323, 327—Manchester, 326—Tulip-show, 327—Scottish Pansy, 330—Rose-shows, 376—Pelargoniums, 429—August 17, 430—Newark Gooseberry, 431—South Kensington, 523—Dundee, 474—Florists' flowers, 475—Dahlia and Verbena show, 477—Edinburgh Southern, 478.
 Hottonia, the culture of, 22.
 Hursley Park and Gardens, 371.

- Hyacinth as a bedding-plant, the, 281.
 Ice, gathering, carting, and storing of, 538.
 Indoor gardening, 518.
 Iresine Herbstii, 181.
 Japan Lilies, something about, 401.
 Kitchen Garden, the: Potato culture, 15—Parsley, 62—Rhubarb, 63—Salsafy and Scorzonera, 65.
 Lapageria rosea, 461.
 Lawns, &c., formation and improvement of, 227.
 Leaf, the theory of the, 344.
 Lilies, notes on, 453.
 Lobelias, bedding, 203.
 Lupinus Californicus, 69.
 M'Kenzie's Parks, &c., of London, review of, 45.
 Meconopsis, culture of, 174.
 Metrosideros floribunda, 356.
 Mignonette, a cottager's mode of cultivating, 279.
 Mottisfont Abbey, the garden of, 315.
 Muscat Hamburg Grape, the, 184.
 My garden in winter, 12.
 Nectarine, cultivation of the, 397, 454, 488, 540.
 Neglected Plants, 355.
 New Plants, 35, 74, 126, 214, 267, 322, 405, 516, 554.
 Notes and Queries, 47, 94, 140, 191, 235, 285, 334, 380, 433, 475, 525, 568.
 Notes of the Month, 2, 52, 99, 147, 196, 243, 292, 341, 387, 439, 484, 532.
 Nymphæacæ, culture of, 251.
 Orchard-house at Chiswick, the, 391.
 Orchids, winter-blooming, 122.
 Ouvirandra fenestralis, 359.
 Over-attention, a chapter on, 269.
 Pansies, 416.
 Pansy, something about the, 76.
 Papaver, culture of, 175.
 Papaveracæ, culture of, 172.
 Parsley, culture of, 62.
 Paul & Sons' Nurseries, a visit to, 365.
 Peach and Nectarine, cultivation of the, 397, 454, 488, 540.
 Peach-tree training, on, 500.
 Peas, the newer, notes on, 413.
 Pelargoniums, raising of, from seed, 80—Gold and Bronze, for exhibition, 59—double-flowered, 218—the large flowering or show, 346—Zonal, for exhibition, 418—fancy, 446—Gold and Bronze and variegated zonal, 545.
 Pentstemon, a plea for the, 552.
 Petunias as bedding-plants, 426, 468.
 Phlox, the, 162.
 Pinkie House, gardening at, 457.
 Plants as sanitary agents, 193.
 Plum, cultivation of the, 8—grown as a pyramid, 82.
 Poinsettia pulcherrima, culture of, 225.
 Potato culture, 15—trials, my, 178.
 Potatoes, new, 185—about, 449—effect of change of seed on crop, 501.
 Rhubarb, culture of, 63.
 Richardia Æthiopica, 274.
 Robinson's Alpine Flowers, review of, 233—on Mushroom culture, reviewed, 332.
 Rock-gardens, the construction of, 319.
 Roses, Pot, how to grow, 90.
 Rose, its culture in pots, 109, 313.
 Roses on their own roots, how to obtain, 498.
 Rose-growing, amateur, 481.
 Royal Horticultural Society and the Horticultural Press, 49—and Provincial Exhibitions, 385.
 Salsafy, culture of, 65.
 Salter's Nursery, a visit to, 128.
 Sanitary influence of plants, the, 193.
 Sanguinaria, culture of, 176.
 Science, the utility of, 473.
 Scorzonera, culture of, 65.
 Sedums, the culture of, 513.
 Seed-case, curious, in Dublin, 4.
 Skeletonising Leaves, the art of, 259.
 Spring, a bequest of, 241.
 Standish, Messrs, a visit to their Nurseries, 557.
 Statice Rattrayana, 539.
 Stocks, pot-culture of, 306.
 Swyncombe Park, the gardens at, 270.
 Table decorations, 182.
 Temple Gardens, the, 45.
 Thames Embankment, gardening on the, 530.
 Tomato culture, 223.
 Tree Ferns, 121.
 Tree scenery, on colour in, 462.
 Tulip, jottings on the, 160.
 Tulip-show, the National, 363.
 Tulips, early-flowering bedding, 261.
 Turfing plant, new, 93.
 Turner's Nurseries, a visit to, 509.
 Vinca, the culture of, 23.
 Vine-borders, the surface cropping of, 21—cropping, 224.
 Vine's Home-made Wines, review of, 432.
 Violacæ, the culture of, 402, 443.
 Wall trees, protection for, 37.
 Weeks's Upright tubular Boiler, 368.
 Williams's Stove-Plants, review of, 566.
 Winderbank's Nurseries, a visit to, 176.
 Window-plants and their culture, 89.
 Winter, my garden in, 12.
 Winter-blooming Orchids, 122.
 Winter greenhouse, the, 555.
 Woodstock, the winter terrace-garden at, 277.
 Worton Cottage, the gardens at, 221.

